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Building quality into its own products for more than 38 years, has privileged Hyatt to symbolize the protection which Hyatt Quiet Roller Bearings afford other quality products.



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And today, after serving the automotive industry since its inception, Hyatt Quiet Roller Bearings enjoy a more wide-spread representation than ever before.

HYATT ROLLER BEARING COMPANY

Newark Chicago Detroit Pittsburgh Oakland

52940

STOPS

*no matter
what
the load*



THE
BENDIX
BRAKE

Massive trucks and buses today travel with safety over the highways at hitherto unheard-of speeds, depending upon the instant and positive action of Bendix Brakes.

These Bendix heavy duty Brakes are engineered to control the momentum of tons of weight with the same smoothness and unfailing exactness found in Bendix Brakes for light automobiles.

Servo Action—exclusive with Bendix—multiplies pedal pressure to a mighty grip.

No truck too big—no load too heavy—there's a Bendix Brake for every job.

Consult our Engineering Department. Write for particulars.

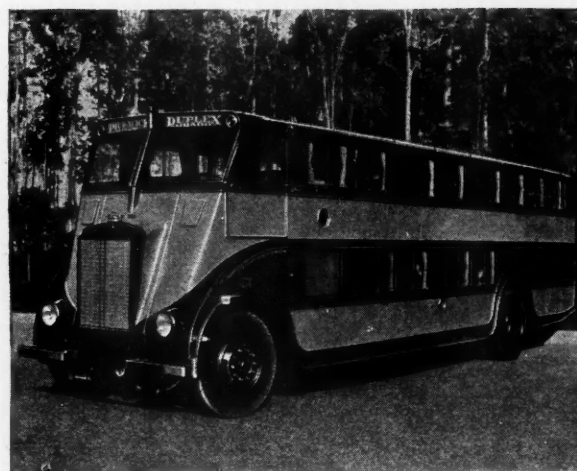
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Vacuum Brake Boosters

(Divisions of Bendix Aviation Corporation)



BENDIX 4 BRAKES

FOR SAFETY

COMMERCIAL CAR JOURNAL

and OPERATION & MAINTENANCE

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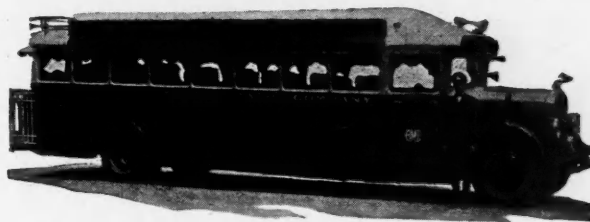


A PILL without a coating of sugar

A MESSAGE TO SICK FLEET OWNERS

WHETHER your trouble is "internal" or "external," here is a message that's not simply "brake lining bunk." . . . These are facts based upon practical experience in solving the brake lining problems of some of the largest traction companies and fleet owners in this country.

Our brake engineers have been successful in developing a heavy duty brake lining that is providing unusual service where lining must withstand severe strain and hard wear.



(Photograph of one of the luxurious Coaches, operated by the Baltimore Motor Coach Company, equipped with ALLTRAFFIC Brake Lining)

The Baltimore Motor Coach Company has written us the following:

"We are using ALLTRAFFIC Brake Lining and find none better. Our Coaches are used on tours throughout the United States in all kinds of weather."

For complete information fill out the slip below and mail to us. Let us prescribe a remedy for your braking troubles.

Manufacturers

DURWYLLAN CO. AT PATERSON, N. J.

ALLTRAFFIC BRAKE LINING WOVEN OR MOULDED

Company
Attn. of
Street
City

Send Prescription



September, 1930

FULLER TRANSMISSIONS UNIT-BUILT BY 3 GREAT PLANTS

Model MGU 4 speeds
with low speed re-
duction... 6.5 to 1.
Load Rating: 3 tons

Model VU
5 speeds for-
ward 2 re-
verse Load
Rating: 4 tons

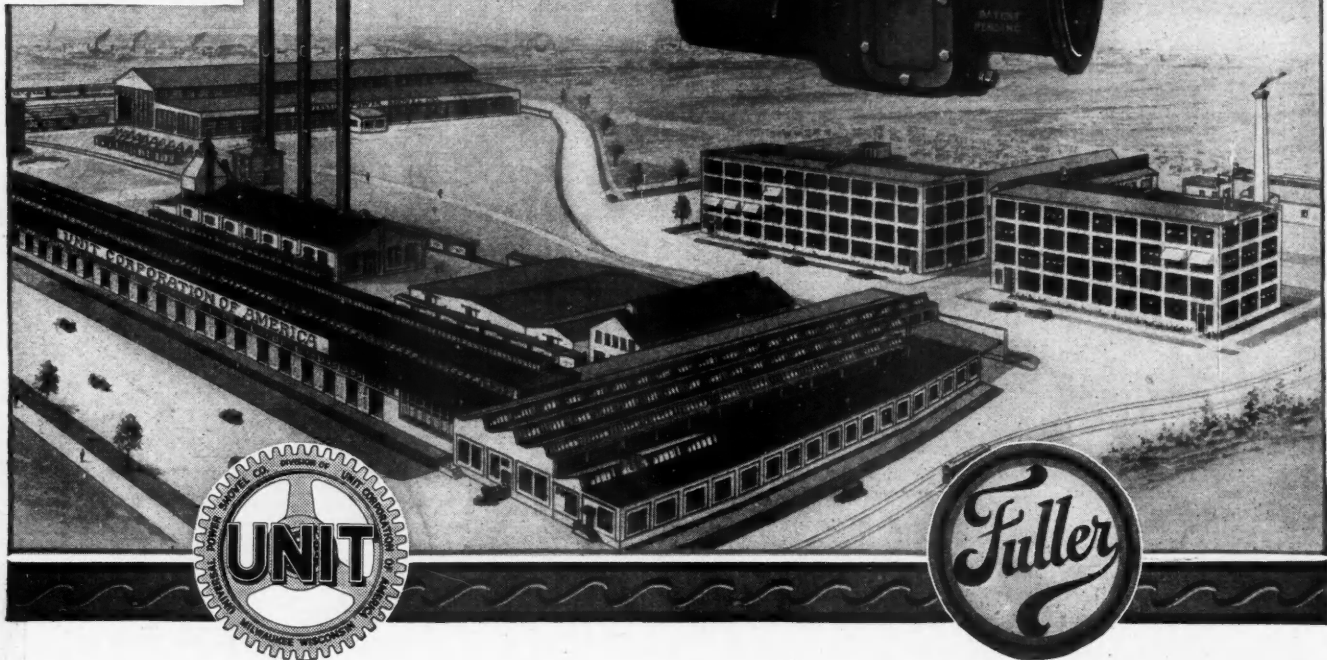
Composite view of the 3
great plants of the Unit
Corporation of America

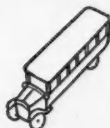
UNIT-Built . . . "from
rough billet to finished
product" . . . in the three great
plants of the Unit Corpora-
tion of America, means UNIT
responsibility . . . in terms of
quality, service, standardiza-
tion of parts, and standing
back of the product.

Complete control of every
phase of production, in every
department, is an advantage
no other transmission manu-
facturer enjoys. Fuller Trans-
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Built" responsibility.

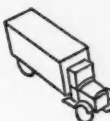
FULLER & SONS MFG. CO.
Division of Unit Corporation of America
MILWAUKEE, WIS.

Transmission Builders for 28 Years





DEALERS: Robert Bosch Vibro-Balanced Horns offer you an opportunity to make substantial extra profits and promote the prestige of your business at the same time. Read the remarkable story below... then send for additional information.



It beeped in Baltimore...
It beeped in Atlantic City...
It's still beeping in Long Island City!

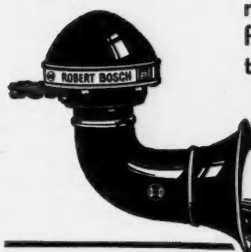
IT started beeping in Baltimore—this Robert Bosch FD-type Vibro-Balanced Horn. A prominent fleet owner there wanted to see how many times it would beep before it expired... as a test of dependability. After it had beeped 201,000 times they had heard enough and turned it off.

Then it was set up during the Robert Bosch Exhibit at the American Railway Convention in Atlantic City. Visitors from all over the country beeped it... and marveled that a horn which had been blown so many times still sounded like new.

Today the same horn is on display at our Long Island City showrooms. People are still beeping it... as this goes to press the automatic counter registers 202,882... and there's no telling how many beeps are still

left in this hardy Robert Bosch Horn.

What does it prove? It simply proves that Robert Bosch Horns give dependable, long-time horn service—witness the fact that the 202,882 beeps registered to date are equivalent to over two years' hard service on a truck or bus. It proves that Robert Bosch Horns will give trucks and buses super-safety—witness the fact that it has answered the button without failing even once in 202,882 times. There's real horn dependability for your customers.



Above: The Master Model Robert Bosch Vibro-Balanced Horn. Especially designed for outside mounting. There is a Robert Bosch horn for every price and purpose.

When you sell a truck or bus, sell a Robert Bosch Vibro-Balanced Horn as especially desirable equipment. The few extra dollars cost to your customer will be more than justified by the horn dependability and safety that he will receive. He will remember you as a reliable, reputable dealer. Send today for additional information regarding the profitable Robert Bosch Franchise.

All Robert Bosch Vibro-Balanced Horns bear the full name "ROBERT BOSCH" and this trademark of Robert Bosch A.-G.



ROBERT BOSCH MAGNETO CO., Inc.
 3603F Queens Blvd., Long Island City, N. Y.

Robert Bosch
Vibro-Balanced
HORNS



Here's A Usable Idea... Instead Of A Sales Talk

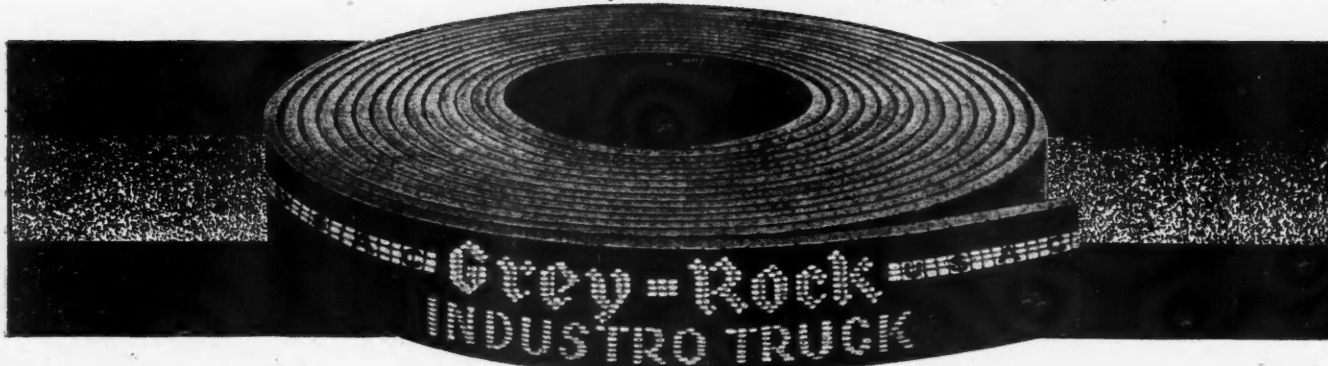
Every progressive fleet operator knows the importance of using good brake lining if brake maintenance costs are to be kept at a reasonable level. Yet many of these same operators go to as little trouble as possible in the selection of their brake lining.

With so many linings on the market—all claiming superior features and performance—it is no easy task to determine which is the best for your own particular job. Instead of buying brake lining because of high sounding statements in sales talks and advertising why not make the lining prove its superiority for itself? Test the various linings on your own trucks, carefully recording installation time and cost, readjustment time and cost, mileage, performance, wear on drums, etc. Such a test will cost a little time and money to conduct properly—but it may save you a lot of both on future brake maintenance.

Grey-Rock Industro-Truck is a good lining, especially engineered to stand the gaff of heavy duty. We could give you dozens of good reasons for its superior performance and economy—perhaps even convince you right here and now that you should use it. But we'd much rather that you made the lining prove itself, on its own merits, in competition with other linings. Then we will feel that you *know* what it can do and will be using Grey-Rock for a long, long time. That's how we got most of our customers—among whom are hundreds of America's largest, most successful fleet operators.

We'll be glad to give you any assistance possible in conducting such a test, by making suggestions on keeping records, making inspections, etc. Write to us.

UNITED STATES ASBESTOS DIVISION
of Raybestos-Manhattan, Inc., MANHEIM, PA.



LONG PRODUCTS Automotive Clutches and Radiators



The Studebaker Free Wheeling
President and Commander
Eights are equipped with the
Long Clutch and Radiator.

LONG



LONG MANUFACTURING CO., DETROIT, MICHIGAN

*The Commercial Car Journal
and Operation & Maintenance*

September, 1930

DETAILS but not *mere details*

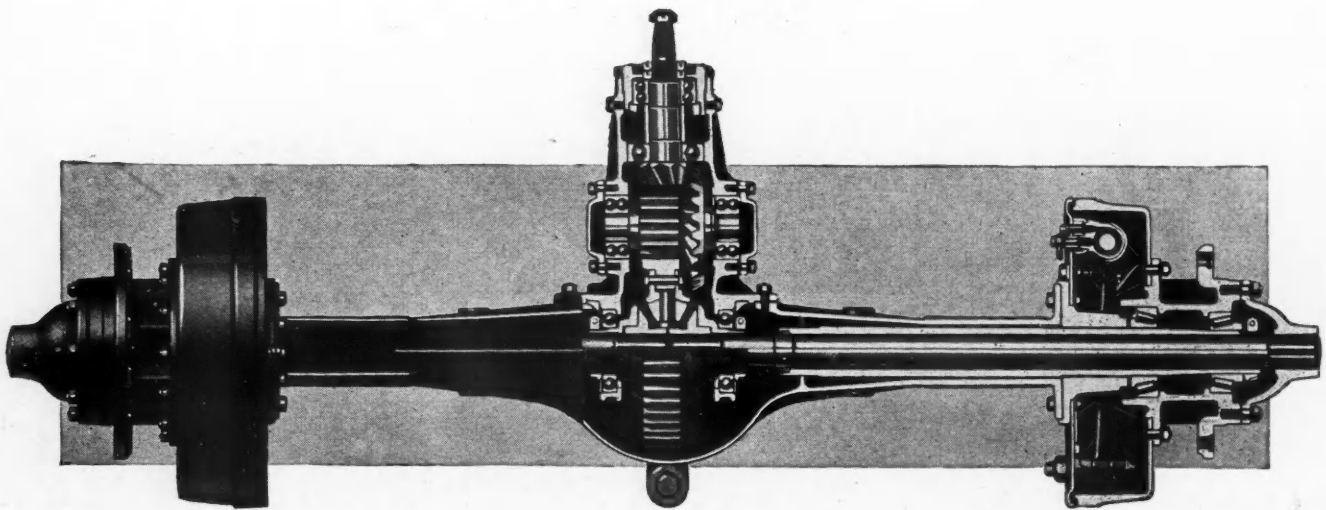


Details account for the sturdiness of Wisconsin Axles —for their ability to deliver thousands and thousands of trouble-free, profitable ton-miles.

They are details of design, which result from years of successful manufacturing experience. They are production details; and inspection details; scores of details, in fact . . . summed up in satisfactory performance which makes more and more users of trucks and buses rely on Wisconsin Axles.

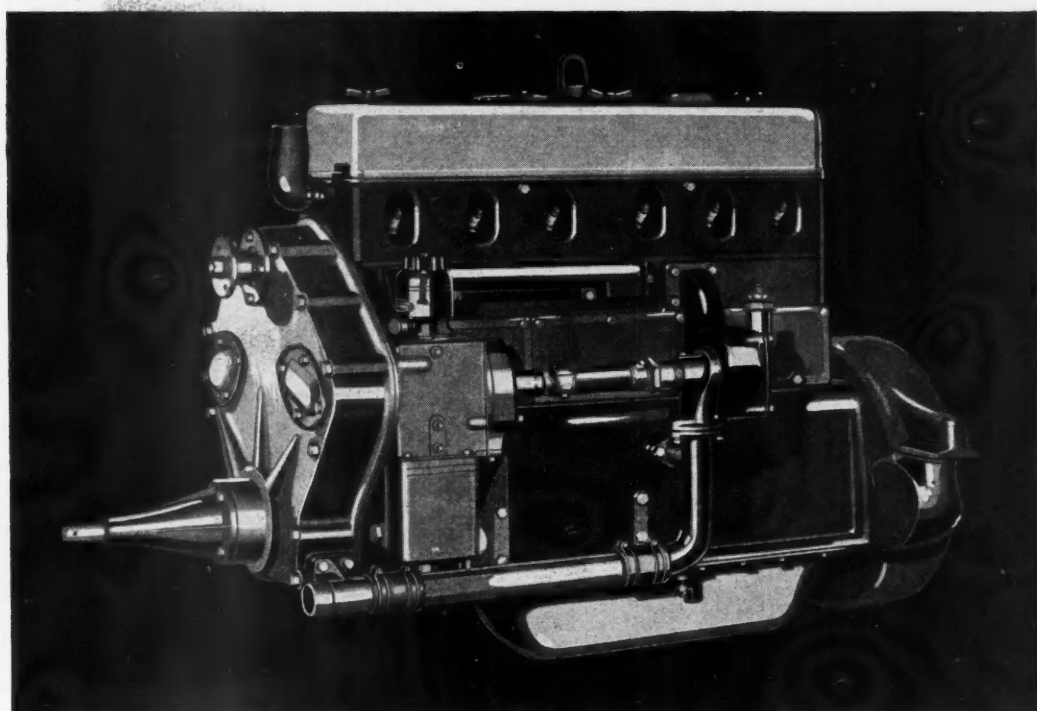
WISCONSIN AXLE COMPANY

Oshkosh, Wisconsin



SPECIFY CONTINENTAL:

“Precision-built” means more miles in the motor and greater profit during the life of the truck



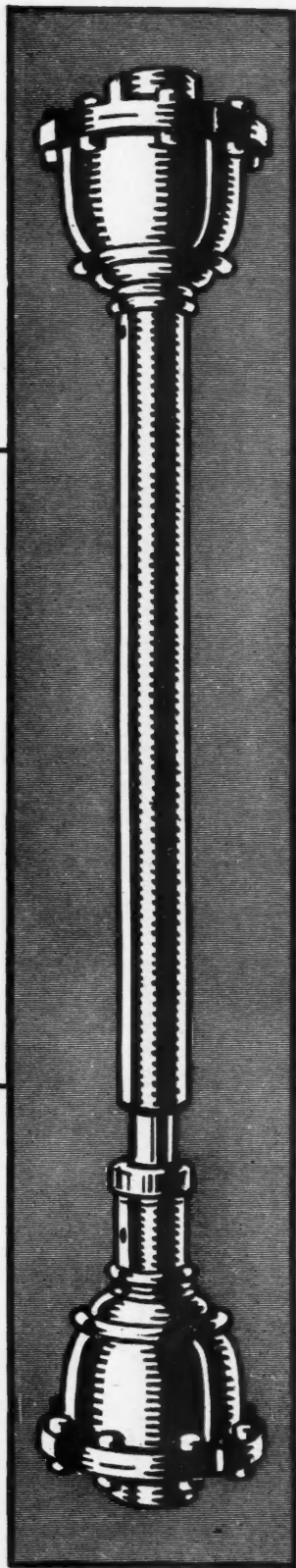
Fine tools, fine workmen and fine standards—plus experience that has developed an almost sixth sense in engineering ability—give to Continental truck engines a “plus-factor” in performance and operating economy that you can feel in the balance sheet as well as under the hood.



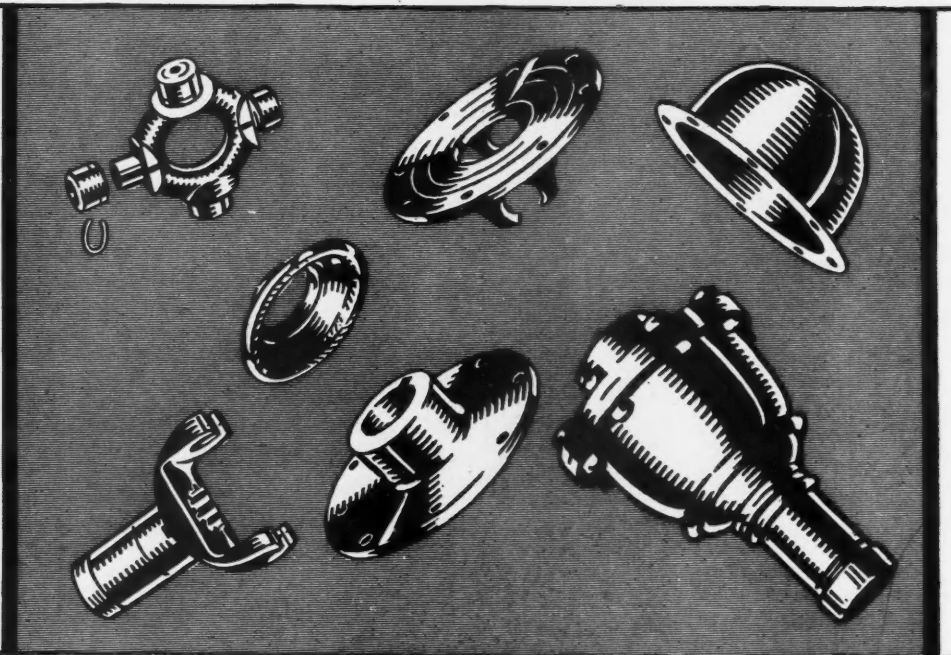
CONTINENTAL MOTORS CORPORATION

Offices: Detroit, Mich., U. S. A. Factories: Detroit and Muskegon
The Largest Exclusive Motor Manufacturer in the World

Continental Engines



GENUINE SPICER PROPELLER SHAFT PARTS



There is only one way to maintain SPICER quality and performance—always replace with Genuine SPICER Joints and Parts.



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CLUTCHES-TRANSMISSIONS
BROWN-LIPE GEAR CO.
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UNIVERSAL
JOINTS

SPICER MFG. CORP.
TOLEDO OHIO.

SALISBURY
AXLES

MODERN CONDITIONS

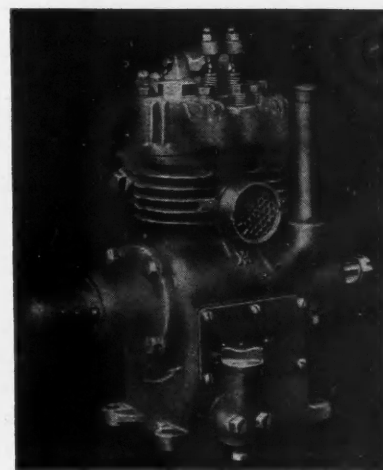
accent the need for

BENDIX-WESTINGHOUSE

Automotive

AIR BRAKES

Crowded highways, jumbled city traffic, unprecedented speed of today's super transport vehicles, modern standards of economic transportation . . . All have contributed to the never equalled popularity of the sure, quick, effortless action of the power brake. Never before has the demand for Bendix-Westinghouse Automotive Air Brakes been so pronounced. As evidence of the trend prominent commercial fleet operators everywhere have standardized on Bendix-Westinghouse Brake Control. They have learned the economy of a perfect stopping force and, when purchasing new units, are rigidly specifying Bendix-Westinghouse equipment in those few instances where the system is not standard. The trend is permanent and its growth apparent with the future evolution of the heavy duty vehicle. Today's Bendix-Westinghouse Automotive Air Brake offers a perfect balance for modern speed and power with a wide margin of reserve for tomorrow's development. The remarkable effectiveness of the Bendix-Westinghouse Brake is not an accident but, rather, the result of sixty-one years' deliberate research, development and manufacture of power braking equipment . . . the recognized safety standard of the world.



The heart of the Air Brake, this sturdy compressor easily becomes a part of any power plant. Tucked away under the hood, it furnishes a never-failing air supply for brakes, air horns and other miscellaneous pneumatic devices.

BENDIX-WESTINGHOUSE
Automotive Air Brake Co.
PITTSBURGH - PENNSYLVANIA

6280

Topping a Remarkable Record!



** In ten years International Truck production has increased 700 per cent, while the total truck production of the industry has increased only 100 per cent.*

CULIMAXING International Harvester's record* of extraordinary growth and progress, comes the introduction of four new 6-cylinder Speed Trucks . . . 1½, 2, and 3-ton capacities. All have the same slim, sleek, speedy appearance, which is so much in demand today. And beneath their handsome exteriors are features of design and construction which contribute to improved performance and operating economy.

In these new models, sound engineering, extensive manufacturing facilities, and highly skilled workmen combine to advance the high standards set by other International Trucks.

The requirements of various classes of service are taken care of with a wide choice of wheelbase lengths, providing for the use of van, stake, panel, bus, dump, and tank bodies.

International Harvester branches and dealers now have these new Speed Trucks on display. Visit the nearest showroom and see for yourself the features of each model. A convincing demonstration will be arranged on request.

INTERNATIONAL HARVESTER COMPANY
606 So. Michigan Ave. of America
(Incorporated) Chicago, Illinois

Model AL-3 —1½ tons

6 cylinders—4 speeds forward
—138", 152", and 164" wheelbases—Spiral bevel drive.

Model A-4—2 tons

6 cylinders—5 speeds forward
—145", 156", 170" and 185" wheelbases—Spiral bevel drive.

Model A-5—3 tons

6 cylinders—5 speeds forward
—140", 156", 170", 190", and 210" wheelbases—Spiral bevel drive.

Model A-6—3 tons

6 cylinders—5 speeds forward
—140", 156", 170", 190", and 210" wheelbases—Double reduction drive.

INTERNATIONAL TRUCKS

**COMMERCIAL
CAR JOURNAL**

AND OPERATION & MAINTENANCE

VOL. XL

PHILADELPHIA, SEPTEMBER, 1930

No. 1



Tires—tires—tires—trucks with four tires—six-wheelers with 10 tires—tractor-trailer units with 14, 18 and 20 tires—trailer trains with 22 and more tires. Everywhere the dependence of the nation on trucks and of trucks on tire equipment is evident. Tires represent an investment by operators running into millions of dollars annually, an investment so costly that it should be protected. Ordinary wear, of course, runs into a pretty penny, but many forms of neglect and abuse easily double the amount. This doubling is avoidable. How? Read the article starting on page 18. It contains everything you need to know about tire care.



SHOP SPECTATORS— PEST OR PLEASURE

By GEORGE T. HOOK

Some Shops Welcome the Presence of
the Customer But Most Admit It
Demoralizes Employee Efficiency

"###-**3/4//XX@@//&%
%\$##()**@@//!!"

JUST pause a moment and translate those signs into the longest and most scorching string of cuss words that have ever saluted your ears. No matter how proficient you are as a translator, the fruit of your effort will give you only a faint idea of the salvo of profanity I walked into the other day when I dropped in at a local truck dealer's service shop on one of my periodical visits. The brimstone was belching from the mouth of one of my mechanic friends, and he kept up the stream for so long that I thought he was engaged in a new kind of endurance contest. At last the flow ceased, and I approached the mechanic and asked him pleasantly what occasioned the flattering eulogy. He was about to let go another torrent of invective when a colleague broke in:

"That hymn of hate that Bill sings so expertly is one that the rest of us would join him in if we only knew the words as Bill knows them. We're all pretty darn sore the way customers come in here, snoop around, stick their noses into places where we can only put wrenches, give advice that's an insult even to an apprentice, and annoy us with questions about this, that and the other thing. Bill just had a pretty bad one hanging over his shoulder for about an hour and when you walked in Bill was just letting off steam. A couple times the customer got so snotty I expected to witness a hammer murder."

"Well," I said, after some of the other boys had pitched in their views and Bill had decided to observe the "Be a Gentleman" notice pasted over the work-bench, "it seems to me that somebody around here is just plain

They're a Pleasure and Should Be Allowed in the Shop Because

1. It wouldn't pay to offend them.
2. You can't let them think you are hiding anything from them.
3. The open shop for the customer inspires him with confidence in the workmen, the equipment and the quality of the job.
4. The average commercial car owner can be trusted not to allow the shop work to worry him. Sometimes his knowledge of his vehicle is even a great help.
5. Their presence has no effect on mechanics who know their work.
6. Mechanics often make contacts with drivers that lead to business.

They're a Pest and Should Be Kept Out of the Shop Because

1. They take up the time of the mechanic and thereby increase the charge for service work.
2. Some mechanics can't do their best work when being watched.
3. Customer-spectators cannot as a rule understand the charges made at flat rate on repairs which are quickly dispatched because of skilled workmen and highly modern machinery and tools. Witnessing such efficiency they are apt to object to the amount of the bill.
4. Of the psychological effect upon the customer-spectator himself. Just as it is better for an ill patient not to know too much about his condition and exactly what variety of treatment he gets in the operating room, so it is better for the truckman not to see his vehicle when it is dismantled and undergoing repairs. It upsets his ideas of the capabilities of the truck unless he is a really experienced mechanic.

Shop Spectators Can Be Kept Out By

1. Setting the service department apart from the rest of the business. Not in another part of the city but on the second floor or third floor, for instance, or even on the first floor, but so separated by partitions and entrances that the customer is faced with barriers which inoffensively speak the intention of the management.
2. By adhering strictly to a plainly indicated "No Admittance" policy, and making only such exceptions as are unavoidable and then placing the customer in the charge of an escort. If reasons are requested by a customer, arguments 1 and 2 immediately above may be quoted together with an explanation that exclusion of all visitors contributes to the efficiency of the shop.

dumb. All you've got to do is keep the customers out and you'll have no annoyances."

"And that," said Bill with a sneer which I well deserved, "proves you're not so smart yourself. Just how, Brilliant Big Boy, would you keep the customer out? Would you take him by the coat collar and the seat of his pants and give him the bum's rush? Maybe you'd tell him we're busy cogitating and don't want to be disturbed? My eye! Or maybe you'd get down on your bended knee and with tears in your eyes say, 'Oh, Mr. Swanson, I pray you not to darken the door of yon service department. I know it's your truck that is to be repaired, but our dear mechanics just can't work when there's anyone around watching them. Oh, please, Mr. Swanson, help me keep peace in our happy little family circle.' Boloney!"

"Well," I admitted after little or no thought, "it does seem to be a problem now that I've got your slant on it. But do you mean to tell me that every shop is putting up with the same annoyance; that nobody is doing anything about it?"

"Search me," was Bill's invitation. "I only know that I've yet to work in a shop where a truck driver or truck owner didn't have the privilege of treatin' me like a trained seal. They think it's part of my job to do my stuff while they look on amused or amazed, as the case may be. And

every now and then they throw me a bad fish in the form of advice. I've always thought the life of a sideshow freak was pretty

TURN TO PAGE 54, PLEASE

IS MONEY SUNK IN EXTENSIVE ALTERATIONS JUST MONEY SUNK?

THERE Was a Time When Almost Any Amount of Truck Design Changes Made in the Field Were Profitable, But Not in This Day of Rapid Engineering Progress, Says Salesman With 20 Years' Experience, Who Points Out the Advisability of Quick Depreciation and the Wisdom of Purchasing New Equipment

TO the shop foreman, to the truck owner, to the sales agent, to the designing engineer, to the manufacturer, and to all others who are interested in the economical and profitable handling of commercial cars—Gentlemen:

The subject of alteration has never, to the best of my knowledge, been discussed in this publication. One good reason may have been that progress in truck design was not as rapid formerly as today and therefore there was no occasion to call the attention of the industry to such facts as I propose to present.

My purpose in expressing myself here is to show that if in this present progressive period a truck owner indulges in extensive and expensive alterations to put off the purchase of a new truck he may be setting up a Frankenstein that may devour not only an investment sufficient for the purchase of a new piece of equipment, but also his profits and even himself if he happens to be in a business in which the truck is his means of earning a livelihood. So let's be getting along.

To become of less worth—that's to *depreciate*.

The amount written off for such loss in value is called *depreciation*.

To cause to become different—that's *alteration*.

Depreciation is never idle because it is continuously taking away or adding something; taking away profits and value or adding grief to financial difficulties.

Alteration is less active and comes into play by command.

However well planned, alteration frequently amounts to so much depreciation, and if alteration expenditures are not cau-

tiously made, then loss occurs. Into such a pitfall of extravagance I wish to prevent your falling. Only a fair amount of brain power is necessary to observe the dividing line between profitable and unprofitable alteration, and the man or company not familiar with the demarcation is either headed for bankruptcy or losses in varying degrees which otherwise might be totally or partially avoided. The following true story of alterations is offered to aid you in seeing more clearly the line dividing profit and loss.

In the year 1926 a popular, four-cylinder, 2½-ton, gas-lighted, solid-tired handshaker was bought for \$4,000. In the course of time it developed that on rainy mornings this truck was half an hour behind schedule for no better reason than that the driver was compelled to battle with curtains before starting on his route, plus added inconvenience of unfastening and fastening again at stops. The foreman, awake to the situation, knew full well it was useless to even suggest to a drowsy driver that he ought to report half an hour earlier on rainy mornings. What did he do? He did the only sensible thing. He ordered a closed cab and had the fresh-air rattler taken off. The cab was installed, the cash outlay running over \$200. What actually became of the \$200? Hold it in your mind's eye; we'll recall it further on.

In 1927, due to changes of load to be carried, a longer body was purchased, which brought about the necessity of lengthening the frame to accommodate the change. This done, a frame sag de-

DISCUSSION BY



BILLIE BORGAN

Truck Salesman for
20 Years



veloped which was overcome with fish-plates. The amount spent on the frame was \$250. Hold this in your mind's eye for further reference. (The body is a separate account.)

In 1928 motor vehicle legislation called for a stricter observance of the 15 miles per hour allowed for solid tire equipment and an increase of 5 miles' speed for pneumatic-equipped trucks, making 40 m.p.h. the going highway speed for traffic. The foreman, again confronted with the problem of time and schedules, sought counsel, and a change-over to pneumatic tires was ordered. Wheels and rubber with spare tire, tire carrier, jack and lug wrench were placed on the job. Amount spent—\$1,000. What became of the \$1,000? Hold this, too, for further reference.

After changing the tires and altering the frame, it was decided the four-cylinder engine was not equal to the job. Though no more actual load was hauled, she was slow on the road. Plank down \$1,250 for a sweet-running, snappy six-cylinder truck engine to keep up with traffic.

Then sad but true the sound of the exhaust had hardly become familiar to the driver before the shortening days of fall reminded him of difficulties with poor lights in the early morning, and moreover a starter ought to help out considerably. No cause for worry; just put down another \$300. (The money rolls in and out because it's round and while it's rolling difficulties fade away.)

By the latter part of 1928, fully convinced that a different steering gear was needed to turn the pneumatic tires on the front, the foreman asked for one and it was put in. Another nick in the saw — \$100, please!

I hope you don't laugh too loud when I tell you two-wheel brakes are the bunk with a four-wheel speed of 40 m.p.h. You have surely sensed the need and jotted down the \$100 for the booster to help us quit going at the right place.

Ugh - ugh! \$3,200 tied up in changes—seven of them in four years, and all of them alteration, according to our definition, because not drawn in the original design. Overhauls, paint jobs and service have been omitted purposely, also loss of time in the shop to make these changes and touch up the paint after changes were made, which would add some of the pennies and days we spoke of leaving out.

● Two in One ●

BUT let me tell you now—this job at the end of four years lacks many refinements found in present production. The \$3,200 spent is an average of \$800 a year for alteration. The same rate continued one more year would make exactly \$4,000—the original cost of the job. Imagine it if you can, and I know you can—the price of two good trucks in one, and that one an old one, in a five-year period.

This is one make and one model, and our investigation proves that many others went through a similar process, and even many other jobs, such as bus-type front axle change-over for shorter turning; six wheels and the third axle attachment, and speedometer changes, and many others to offset rubber change-overs.

Let us depart for a moment to the used-truck market and inquire the sale price of the original model with which our story is concerned. This in most cases answers the trade in on new stuff. We are told from \$1,200 to \$1,500, according to appraisal. Mention of alterations brings an answer slightly higher—\$1,500 to \$1,700, the pneumatic tires causing the difference.

Tell me, if you can after recalling the tab from your mind's eye, what became of the \$3,200?

Depreciation is a bitter pill but the penalty for alteration is even worse when you consider how little of it can

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TIRES NEED NURSING



FOR MILEAGE HEALTH

Regular Inspection, Preventive
Maintenance and Considerate
Treatment Result in Many Ad-
ditional Miles of Profitable Use

By MARTIN J. KOITZSCH

EVERY year loss of millions of miles of tire life, not to mention delivery interruptions totaling thousands of hours, are caused by tire neglect. This great economical loss is preventable and entirely unnecessary. A truck tire probably gets more abuse and less attention than any other article in general use and yet is very responsive to care. The old adage, "a stitch in time saves nine," is particularly applicable to the tire and clearly indicates the way to maximum tire mileage.

Tire care, of course, is the answer for attainment of healthy mileage. This fact is generally recognized, but strangely very few operators actually do anything about it. For some inexplicable reason the tire is treated like a stepchild and, worse still, frequently does not receive the ordinary care that even a stepchild deserves. Perhaps the explanation for this attitude lies in the fact that the penalty of tire neglect is not immediate. Because a tire continues to perform although overloaded, under-inflated or cut to the breaker strip, the need of reducing the load, properly inflating the tires or promptly repairing a minor cut is not recognized as urgent. As a result care either is not given at all or postponed indefinitely.

Tires need attention and nursing. They need it perhaps more than any other single unit making up a truck chassis. Absence of this care results in abuse and the abuse in injuries,

which forgotten, accumulate until suddenly, like the "deacon's one-hoss shay," the tire collapses beyond redemption after serving only a fraction of its potential life.

The penalty of improper tire service is surprisingly severe and is dealt in two ways: directly and indirectly. Directly from premature failure of tires, which lessens the average tire mileage, necessitates frequent replacements and, of course, increases operating expense. Indirectly, and this may be as great if not greater than directly, through time-losing delivery interruptions caused by flats. Here's an example of how the penalty may be exacted: The inside tire of a dual wheel goes flat while the truck is on the road. What happens? The flat entails the expense of change involving service, equipment, time and labor; it means tire repair cost; it involves possible damage to outer tire before flat is detected; it incurs loss of the use of the vehicle during the change; and finally, and not of least importance, the delay may disgruntle the customer and adversely affect the good name of the company depending on the truck. While it is obvious that the direct penalty of many delays is costly, the cost of indirect penalty is not so obvious and, it should be remembered, expense of this character is not computed in the tire cost per truck mile.

• Nursing Ritual •

THERE are three things an operator can do to get maximum mileage from his tires. First, equip the truck with tires of the proper size;

second, instruct drivers to exercise care while driving to favor the tire; third, arrange to have the tires regularly and properly serviced.

Since tire performance depends to a great extent on the load which it carries, obviously it is wise to determine accurately the loads to be carried on each load. Failure to do so may result in overloading. Loading a tire beyond its rated capacity may cause over-stressing by heavy inflation or excessive flexing of the side walls and distortion of the tread. Sooner or later this misuse results in broken fabric, rapid and spotty tread wear, tread and ply separation and finally in complete failure of the tire.

The most satisfactory method of determining what size tire is correct is to actually weigh first the front wheels and then the rear wheels of a vehicle, checking the sum of these weights against the weight of the entire vehicle. In some cases it may not be possible to weigh the unit fully loaded. In such instances distribution of pay-load can be approximately determined by adding the pay-load per axle to the empty weight of the truck front and rear. In this manner the approximate total load by axle is obtained. This weight by axle can then be divided by the number of tires on each axle to determine load on each tire. Method of computing the pay-load is as follows:

- A—Distance from front hub to center of pay-load.
- B—Distance from rear hub to center of body.

C—Distance from hub to hub.

Measurements must be taken in inches. Apply the following formula to obtain percentage of pay-load on front and rear axles:

$$\frac{B \times 100}{C} = \text{Per cent of load on front axle.}$$

$$\frac{A \times 100}{C} = \text{Per cent of load on rear axle.}$$

● Driver Care ●

NO matter how much care is taken to fit the right tire to the load or how excellent the servicing facilities at the garage much of the good derived from these excellent provisions is lost unless the driver can be encouraged to add his bit by proper treatment of the tire while on the road. Once convinced of the importance of avoiding certain abuses the driver can help definitely in the nursing by:

Not jamming tires against curbs or into chuck holes.

Avoiding scraping contacts against curbs and jutting obstructions.

Accelerating and slowing down without spinning and locking wheels.

Attending to underinflated tires promptly.

Replacing valve caps after inflation and keeping them clean.

Not attaching anti-skid chains too tight.

Removing immediately obstacles wedged between dual tires.

Refusing to operate on a flat.

Beware the careless driver whose tires are over-inflated at one time and under-inflated at another, who constantly drives at excessive speeds on the open road and cares little for the abrasion, slipping and spinning caused by going over avoidable rough roads, who uses his four-wheel brakes to the limit and leaves tire marks representing hundreds of miles of rubber on the road, who jams the accelerator to the floor and jumps the vehicle away at the start, takes turns at high rates of speed, who applies anti-skid chains too tight, causing tread to be gouged by cross-links and who ruins tires and tubes by running on flats.

● Dispensary Program ●

THE third step in tire preservation is proper service. When considering this final phase the question might be "Who is going to furnish this service?" Can it be handled economically by the operator himself, should he get it from an organized tire service station, or should he avail himself of both? The answer will vary with the circumstances, but the main thing is that somebody should do it. Irrespective of who does it, a discussion of what such service should comprise is more to the point at the moment. Proper tire service provides first the regular checking of inflation pressures; second, inspection of tire condition; and third, prompt correction of defect. That the duties of tire service are many and important is quickly reflected by the following impressive list of things to be borne in mind:

Proper inflation, leaky valves, tight rims, rim bruises, deep cuts, small cuts, tread wear, wheel wobble, misalignment, faulty brakes, removal of abrasives, spot repairs, sectional repairs, etc.

The chief factor in the life of any pneumatic tire is the air contained within the tube. Contrary to general opinion it is the air that carries the load and not the carcass. The carcass is merely a container for the air. The amount of air must always be sufficient to carry the load and permit the tire to perform its natural function, otherwise the tire will fail from flexing brakes, excessive tread wear, carcass rupture, tread separation, rim cuts and rim bruises.

Pressures should not be guessed at when inflating tires, but should be based on pressure charts furnished by all tire makers. Balloon tires are especially vulnerable to improper pressures and should at all times be kept inflated within one pound of the recommended pressure. If high-pressure tires are checked only once a week they should be inflated 10 per cent above the recommended pressure. Should regular inspections reveal a certain tire to be persistently low, the cause should immediately be sought and corrected. Loss of pressure may be through the valve base, valve core, because of a dirty valve, leaky tube, etc. The alert inspector will also

tighten nuts on valve at the base and valve cores occasionally. He will always apply valve caps and screw them tightly as they aid in retaining air and prevent dust and mud from getting into the valve and under the valve seat. He will also see that the lock nut on the valve stem is screwed down tight to prevent a tube from being ruined when a tire goes flat by the valve being pulled inside the casing. Care should be exercised in mounting dual disk wheels to make sure that hand holes line up to admit of ready inflation from the front.

● Rim Ailments ●

RIMS often play an important part in the mileages of tires. Bent and rusty rims often prove expensive. When a flange has a bent spot the bead of the tire is not properly supported and air pressure from within causes a bulge in the tire. This bulge causes chafing of the bead covering whenever this portion of the tire comes in contact with the road, ultimately weakening the bead and causing tire failure. Generally it is possible to straighten rim flanges with a hammer, but if rims are in such a bad condition that they cannot be fixed they should be replaced with new ones. Rusty rims cause damage to beads and should be cleaned at each demounting to prevent erosion and rust accumulation. Old rims should be buffed and painted with aluminum or graphite paint before new tires are applied. Such care reduces another form of bead chafing and eventual rim cuts and the chance of tires freezing to the rim with consequent need of excessive and injurious force in mounting and demounting. Studs or lugs should be tight. Loose lugs not only induce elongation of stud holes, promoting uneven tire wear, but bring with it all the other dangers of a loose rim. Use of standard rims with oversize tires is not uncommon and is a practice that cuts into tire life. The narrow width of such rims cause the beads to be drawn closer together than normal with the result that only the heel of the bead contacts the rim face and flexing at the side wall occurs at a point not designed to assume this function.

Care should be exercised when using oversize dual tires on standard rims that sufficient spacing is provided between tires. Insufficient spacing allows dual tires to rub on the inside, causing loose tread at shoulders, changing flexing and, of course, premature failure.

Split rims improperly joined because of battered condition cause injurious chafing of bead. When locked,

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TIRES NEED NURSING FOR MILEAGE HEALTH

JULY AND AUGUST GIVE TRUCK INDUSTRY SMACK

SALES DROP MOUNTS GRADUALLY IN FIRST EIGHT MONTHS

DOMESTIC truck sales in the first eight months of 1930 were 19 per cent under the total for the same period of 1929. Foreign truck sales for the same eight months of 1930 were 36.6 per cent under last year's figure. Total foreign and domestic sales were 26.2 per cent less.

And there you have an easily digested paragraph anent the state of the truck business at this very moment. It is not a pleasant pill but there should be some relief in the knowledge that other industries have swallowed more bitter ones since last October.

Just glance over the percentages in Table 1 on this page. The table tells an interesting story. It reveals the gradual effect the depression in business generally has had on the truck industry, from a slight gain in January to the low water mark in August. It had to happen just as the figures show it did happen because the truck, being a business accessory, is affected in direct proportion to general business. This observation may be elementary but it is important and should be borne in mind when viewing the future. For instance, if the truck industry should be content to let economics take a natural course its rise to so-called normalcy might be just as gradual and protracted as its descent. However, at the first sign of a business upswing the trade might readily accelerate its own prosperity by assuming the initiative with intensive sales effort. After all there is no better time to talk economical transportation to a business man than when he is experiencing a business pickup and is battling with competitors for advantages.

Table 2 tells quite another story—the effect of the business recession on the earnings of companies interested in the lucrative truck market. No comment is necessary beyond the explanations that the companies listed are the only ones whose statements were available, that their truck sales were 43 per cent of the total for the first six months of this year, and the bulk of the deficit incurred by each combination passenger car and truck manufacturer can indubitably be laid on the running boards of the passenger car.

TABLE 1

Domestic Truck Sales

	1930	1929	% Gain or Loss
January	30,241	29,857	1.3
February	31,882	32,565	-2.1
March	42,182	46,348	-9.0
April	47,032	50,278	-16.4
May	43,245	52,875	-18.3
June	33,512	45,075	-25.6
July	39,888	57,946	-31.1
August	35,000*	52,540	-33.3*
8 Months	302,982*	373,484	-19.0*

* Estimated.

TABLE 2

Net Income First Half

	1930	1929	Per Cent of Loss
General Motors	\$98,355,355	\$151,860,310	-36
Chrysler Corp.	3,408,856	18,095,239	-81
Studebaker	2,258,702	10,883,592	-79
Willys-Overland	151,704	4,155,478	-96
Reo	(d) 349,397	1,686,358	-120
Brockway	212,335	548,451	-61
Fageol	1,308,499	2,285,887	-43
Federal	191,458	315,771	-39
Mack	1,900,633	3,911,128	-51
White	1,048,711	1,404,575	-25
Totals	\$108,486,856	\$195,146,789	-43

(d) Deficit.

WHAT HOLDS THE



EDITOR'S NOTE

This, the second of a series of articles explaining the whys and wherefores of various designs incorporated in major units of trucks, is devoted to rear axle construction. Features which distinguish semi-floating, three-quarter-floating, full-floating and dead axles are shown and explained

By ATHEL F. DENHAM

REAR WHEELS ON?

Two Wheel Bearings in Full Floating; Drive Shaft in Semi-Floating; and One Bearing and Axle Shaft in Three-Quarter Floating Type Axles

WELL, a couple of hours later we got back to our swivel chair, and there was Mac, still waiting for us, and evidently hugely enjoying our pet box of Manila Ropa Perfectos, which he had discovered in the bottom drawer of our desk. We salvaged the one remaining cigar and to get the matter over quickly, said: "Well, Mac, sorry to keep you waiting, but what was that other question you were going to ask me about trucks?"

Mac grins. "You old egg," he says, "I know you tried to duck me, but I'm not going to let you get away with it. What I want to know is: what is the difference between all these truck axles? Some of the jobs these fellows have been trying to sell me, they say, have semi-floating axles, some say theirs have full floating axles, and some split it at three-quarters. What difference does it make?"

"Ivory soap," we say, and when Mac looks inquiringly at our editorial countenance, we proceed to elucidate: "It floats. Moreover it is claimed to be 99 44/100 per cent pure. Aside from that it has nothing to do with the case. If you could get rid of Mrs. MacAndrews, your esteemed mother-in-law, and your farm, we might call you full-floating—or as Webster has it: free from the usual attachments. If you couldn't dispose of the farm, but Mrs. Mac and her mother would go away on a prolonged vacation, we might call you three-quarter floating. If Mrs. Mac stayed behind, semi-floating would be the best we could do for you."

"Well, that would help a lot," Mac reflects. "I think though that if they all stick by me I would finally become a dead Axel, if I were Swedish."

"Absolutely and scientifically correct," we reply, much to Mac's surprise, "except that in your case you would only be good fertilizer, whereas in a truck a dead axle is highly esteemed by manufacturers of some of the big trucks, in that it provides all the support for the truck, which is more than you could do unless you pay up your insurance premiums."

"Wait a minute," says Mac, "this is all very illuminating, but my original question was serious."

(Isn't it funny? You explain something to a fellow like Mac and when you get all through he thinks you have been discussing the weather. Is it the heat or just the stupidity?)

"All right, let's start over again," we recommence. "In the first place a rear axle has three jobs. It provides spindles or bearings about which the rear wheels revolve; transmits the power or driving torque to the wheels, and supports the truck. In most cases the axle shaft takes care of the job of making the wheels go around. The other two jobs are handled, however, in all kinds of different ways. In some of the heaviest trucks, as I tried already to explain to you, a separate 'dead' axle is used, to which the wheels, springs, radius rods, etc., are attached. When these dead axles are used, the drive is taken through gears at the wheels, or by chains.

"But more often than not, we continue, 'one axle is used to do all three jobs. This applies to almost all passenger cars built at present in these United States, with the exception of the front drives, which have separate axles to carry the wheels and trans-

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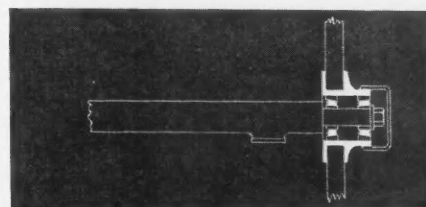


Fig. 1—This is called a dead axle because the rear wheels are mounted on a solid axle which does not transmit driving power to them

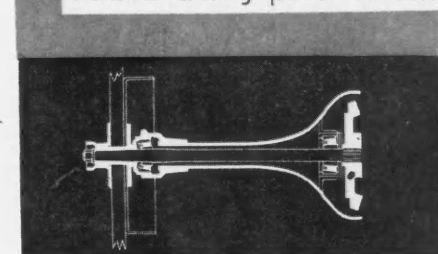


Fig. 2—In a semi-floating axle the rear wheel is attached solely to the end of an axle shaft which projects beyond bearing at housing end

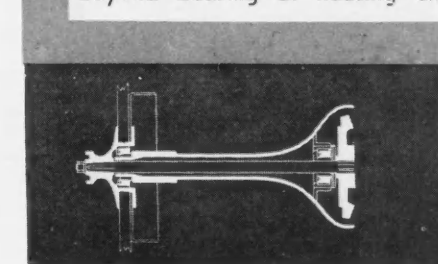


Fig. 3—Housing and axle shaft divide job of supporting and holding wheel in a 3/4-floating axle. A bearing carries part of the load

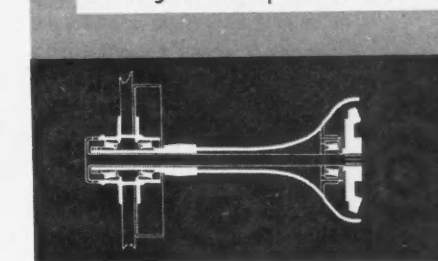


Fig. 4—Wheel is mounted on outside of housing on two bearings in full-floating axles. The axle shaft serves only to turn the wheel



1400 LEGISLATORS EQUAL 1400 BILLS

A BILLBOARD advertisement of a popular cigarette cries "In women—it's charm; in tennis—it's stamina; in racing—it's speed." To all this we add one of our own: "In state legislatures—it's sock the automotive industry!"

This paraphrase occurred to us with practically no thought after perusing a report that nine state legislatures held sessions this year at which 15,000 bills were introduced, approximately 1400 of which affected the automotive industry. And the 1400 does not include measures dealing with highways.

Now when you know that the number of legislators representing these nine legislatures was in the vicinity of 1400, it's simple arithmetic to figure that automotive bills introduced averaged one per member. If that isn't unwholesome popularity then we don't deserve any appreciation for the trouble we have taken in presenting these interesting statistics. It seems

AFTER HOURS

that the first thought of an assemblyman or senator upon being elected to the legislature is to knock off from his plumbing, his pants pressing or his garboon burnishing and devote a few thoughtless hours to composing a piece of legislation aimed at the automotive industry. And the big point is that their thoughts aren't chiefly directed at passenger cars because such legislation would doubtless affect them directly. When the desire to throw vitriol comes over legislators their first objective is the motor truck and their second the motor bus. It used to be that the railroads were given preference, but not any more.

Legislation against the motor truck ranges from the ludicrous to the pernicious. Illustrating the former is the bill that sought to compel trucks to carry sand boxes for use on grades in wet or sleety weather. Typical of the latter is the measure that wanted every man or similarly inclosed truck body to carry a helper whose duty it would be to keep a lookout when the driver was backing up.

It is all a good laugh with tragic consequences always just around the corner. Obviously the industry must be prepared and alertly defensive. The truck trade and truck users must be organized in each commonwealth to ward off the blows before they produce tears.

If you are interested in the legislation passed by other states this year, the following summary will take up only a few more minutes of your time:

South Carolina increased the gross weight of trucks to 12½ tons for single units, or 20 tons gross on combinations of units. Maximum height was increased

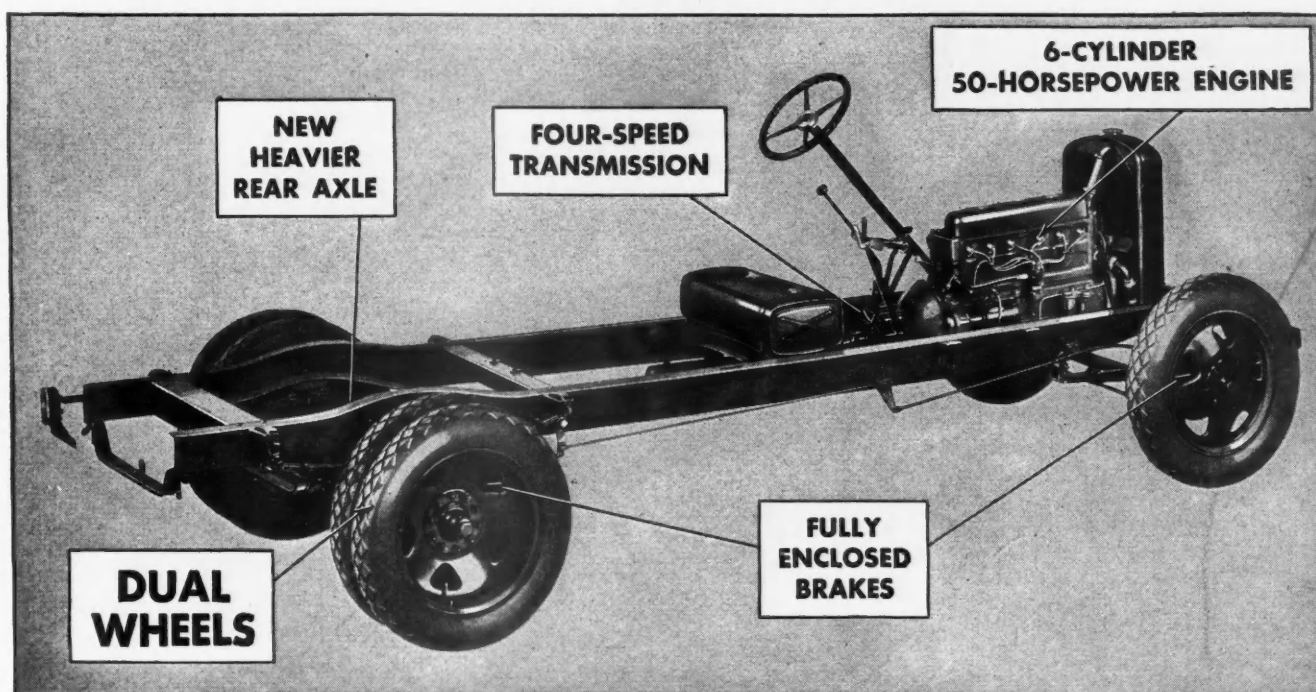
to 12½ ft. and maximum length to 33 ft. Both Virginia and South Carolina enacted new laws affecting common carrier operation. The Virginia law reclassifies trucks so that apparently if the law is strictly enforced the contract carrier will be entirely eliminated from the highway. The law has not yet been tested. In South Carolina contract carriers now must secure certificates of convenience and necessity just as common carriers do. South Carolina also enacted a law requiring the licensing of all drivers. Applicants passing examination will receive licenses good until 1933, after which time licenses will be renewed for a four-year period.

New York and Massachusetts passed laws specifically permitting six-wheel trucks under certain conditions and increasing the maximum load allowed on these trucks. The New York law specifies 42,000 lb. gross on pneumatic tires, and 36,000 lb. on solids. Operation of the six-wheelers is restricted to certain highways to be designated by the highway commission. Massachusetts limited the gross weight of six-wheelers to 40,000 lb. and did not differentiate between pneumatics and solids. Operation is permissible only over "through highways." New York paid some attention to trailers also. The law provides that trailers of over 3000 lb. gross placed in operation on or after Oct. 1, 1930, must be equipped with brakes. Also that all trailers shall be so attached to the tractive units that their wheel tracks shall not vary more than 6 in. from the wheel tracks of the tractive units.

In that batch your judgment is as good as ours in sorting the good from the bad.—G.T.H.



Chevrolet **announces** A NEW 6-cylinder Truck with Dual Wheels



To those thousands of business organizations who want a big, rugged, powerful truck of unexcelled economy—Chevrolet has this important message: *A new six-cylinder 1½-ton Chevrolet truck—with dual wheels—is now ready for service!*

In everything that makes a truck more useful—more profitable—and more desirable in modern business—this new Chevrolet excels. It offers advantages in performance, in dependability, in economy and in good looks that are new to the low-price commercial car field!

Of special importance in many types of heavy-duty hauling is the new dual wheel equipment—of sturdy web-type design. This equipment is now available at slight

extra cost, and includes six truck-type cord tires.

Another valuable feature is the new rear axle—bigger, heavier, more durable. Still others are the unusually large and completely enclosed brakes—the double-steel channel frame—the four-speed transmission. And Chevrolet's now-famous 50-horsepower valve-in-head six-cylinder engine provides the smooth, flexible, powerful, *economical* performance that modern trucking conditions demand.

If you are interested in buying a low-priced truck, there is all the more reason—*today*—why it's wise to choose a six-cylinder Chevrolet. Your nearest Chevrolet dealer will be glad to give you a trial load demonstration *any time*.

UTILITY 1½-TON CHASSIS

\$520

Dual Wheels \$25 Extra

Light Delivery Chassis . . . \$365
1½-Ton Chassis with Cab. \$625
Roadster Delivery \$440
(Pick-up box extra)
Sedan Delivery \$595
All prices f. o. b. Flint, Michigan

CHEVROLET MOTOR COMPANY, DETROIT, MICHIGAN, Division of General Motors Corporation

IT'S WISE TO CHOOSE A SIX

The Commercial Car Journal
and Operation & Maintenance

September, 1930

TEARING THE MASK FROM OIL THIEVES

An Expose in Which
Causes of Excessive
Consumption Are
Collared and Taken
for a Ride

IS it possible for an engine crankcase to be robbed of oil secretly, like a store till by an erring clerk?" George Hook, editor, looked up from a letter he was reading and turned to the technical editor on his staff for a reply.

"Yes, sir. Yes, indeed. In cases of oil pumping and those stages of excessive oil consumption that lead up to fouled plugs and other troubles, quarts and quarts of oil poured into the crankcase simply disappear," I answered.

"Are there no clues?"

"There are clues, not too plain in some cases, but there are some clues in all cases."

"How many causes of oil pumping are there, and how can a mechanic tell one from the other?"

A panorama of varied scenes, without plot or sequence, passed through my mind before I replied. Worried service managers—, truck owners making pointed inquiries—, fancy pistons—, trick rings—, cylinder honing—, heavier oil—, mystery—, detection.

"Four leaders dominate the gang of oil thieves, but each of them wears many disguises and has several followers. First on the list—, but let me know just what the owner's trouble is."

"A fleet owner writes me asking why his truck uses so much oil. He is having trouble with spark plugs. As he is only one of many who have written to us, why not make the answer complete and give it to our readers

GUMSHOE WORK BY



JAMES W. COTTRELL

to help them track down oil thieves who are reaching their pocketbooks via engine oil?"

Here is the answer:

First on the list of suspects are piston rings, then follow pistons, next cylinders and finally, the oil itself.

Rings may be worn on the face until they have no tension, stuck in grooves from heat and/or carbon, be loose up and down in grooves, scored from running dry, or unsuited to the engine in which they are used.

Pistons may be scored, have too much clearance, be out of round, mounted on bent connecting rods or be unsuited to the engine and

service in which they are used.

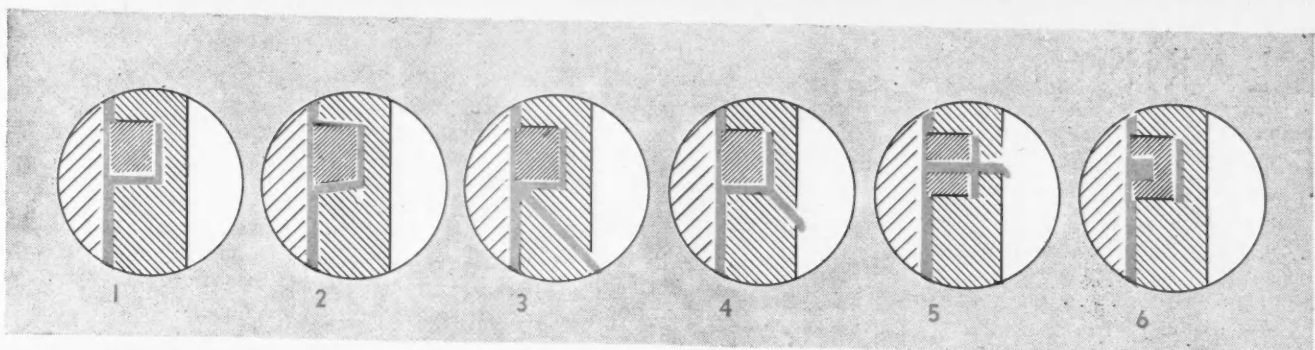
Cylinders may be tapered, out of round, scored, distort under heat or be out of alignment with crankshaft.

Oil causes its own loss when too much is thrown on cylinder walls by loose bearings in a pressure-lubricated engine, when it is diluted by light ends of fuel and finally when the oil used is too thin, even when fresh, for the engine.

The two most common remedies for oil pumping are to change to a heavier grade of oil and to install new piston rings. While these remedies frequently are effective, it by no means follows that they are the correct remedies.

Changing to a heavier grade of oil is strongly condemned by several prominent manufacturers. As one of them expresses it: "Heavy oil when first used may cause a decrease in engine oil consumption—, but its continued use will tend to gum and stick the compression and oil rings in their respective grooves,

At right—How oil leaks are controlled by rings. Fig. 1—Oil by-passing worn rings; Fig. 2—Ring and groove worn on top and bottom; Fig. 3—Chamfer and oil drain; Fig. 4—Oil drain from groove; Fig. 5—Ventilating slot in ring opening into drain groove, and Fig. 6—Groove ring face



and this condition will materially increase oil consumption."

Increase in oil consumption usually comes on gradually. A filling of the crankcase will serve the engine until it is time to drain and refill with fresh oil. After a time the owner notices that it is necessary to add a little oil to keep up the level until the draining. After a few more thousand miles of travel he finds that it may take a quart or two. This continues until he is adding oil almost every time gasoline is put in the tank. In the final stage the oil reaches the combustion chamber in such quantities that plugs start to foul every few days, and in extreme cases every few hours. By this time the condition is serious because it interferes with operation of the truck in addition to costing money.

Granting that the oil is known to be of good quality and adopted to the engine in question, and the service in which the truck is operated, service men look to the piston rings as the culprits responsible for loss of oil.

It is high time that something good was said about piston rings. They have been cursed too much, unjustly accused and thrown out for no fault so often that "there ought to be a law against it."

Scored cylinders will pump oil in spite of the best efforts of well-fitted rings. Loose connecting rod bearings may throw off so much oil that rings, otherwise satisfactory, cannot handle the deluge. During a long trip down hill in gear with the truck driving the engine there is a partial vacuum in a cylinder most of the time, and this draws oil into the combustion chamber.

A piston ring has plenty to do. It sweeps over an area equal to city building lot, 25 by 100 ft., every minute and maintains a film of oil on all of that surface. Pressure on the ring varies from 300 lb. per sq. in. to a partial vacuum, temperature ranges from below zero to 300 deg. or more. Any well-behaved oil ring deserves a medal.

"Why does this engine use so much

The Forty Thieves

Rings

1. Worn on face
2. Loose up and down in groove
3. Stuck in groove from carbon
4. Scored from running without oil
5. Scored from running without water
6. Not ventilated
7. Not grooved
8. Wrong type for service
9. Improper fit in cylinder
10. Too tight in groove

Pistons

11. Scored
12. Out-of-round
13. Too much clearance
14. Not grooved
15. Not drained
16. Worn grooves
17. Mounted on bent rods
18. Wrong type for service

Cylinders

19. Scored
20. Tapered
21. Out-of-round
22. Distorted from heat
23. Not true with crankshaft
24. Cylinder head loose, causing water or oil leak

Oil

25. Too thin
26. Too thick
27. Dirty
28. Diluted
29. Too much throw-off from bearings

Outside Leaks

30. Valve plate gasket
31. Loose valve cover
32. Oil pan gasket
33. Timing case gasket
34. Rear main bearing
35. External piping
36. Clogged breather
37. Loose drain plug

General

38. Faulty plugs
39. Bad valves
40. Excessive crankcase ventilation

oil?" The first place to look for loss of oil is outside the engine. Little pools of oil under a truck each morning show that oil is leaking out. If the oil pan is wet on the outside we suspect the oil pan gasket. If there is more oil on the front of the pan than at the rear we have misgivings about the timing gear cover gasket. Oil coming down the rear end of the pan and the forward face of the flywheel housing reveals that oil is getting out of the rear main bearing. A positive check for this latter condition is the oil-pressure test described last month.

There is nothing very mysterious about these losses of oil. The cause is apparent. But when oil disappears inside an engine without leaving any outward trace, service men are puzzled, sometimes baffled.

Bad cases of oil pumping call for taking off cylinder heads and removal of connecting rod and piston assemblies. This labor is not lost because a carbon and valve job usually is in order anyway. With the engine opened up to this extent it is easy

to make a thorough examination and track down the cause of loss of oil.

Ordinary wear of the face of rings is frequently overlooked. On examination the ring face shows a dull silver color all around indicating that it is contacting the cylinder walls properly. But all of the life is gone from the ring. Compressed until the gap is closed, it is slow in snapping open again. Rings in this condition usually show signs of wear on top surfaces as well. Measure width and thickness of ring to settle this question.

Up and down play of a ring in a groove provides a valve action which makes an excellent pump. On down stroke of piston the ring is at top of the groove and oil is forced under bottom edge of ring and into space behind it, as shown in Fig. 1. Because top surface of the ring does not fit perfectly against top of the groove, some of this oil is squirted on the cylinder wall, thus by-passing the ring. At bottom dead center the ring moves to bottom of groove displacing oil to top of groove and so to cylinder walls.

Loss of oil between face of piston ring and cylinder wall is a form of larceny which is hard to detect. Some oil must be left on the cylinder wall for lubrication of piston and rings. But it is difficult to provide just enough oil at all times and not too much at any time. It really takes a lot of force to shear through a film of oil, such as that deposited on a cylinder wall by oil mist in crankcase and spread out by preceding strokes of a piston. There is a tendency for the ring to ride over the film, like a surf board towed behind a fast motorboat. This tendency cannot be overcome entirely but its harmful effects can be reduced.

Space can be provided for the oil, scraped off by the edge of the ring, to accumulate. This space may be a chamfer on the piston below the ring or a groove in the ring itself. Another method of getting rid of the crest of the oil wave ahead of a ring is to cut slots through the ring so that oil can pass behind the ring, as in Fig. 5. There is, of course, no law against combining these methods in various forms such as rings which are both grooved and ventilated, or grooved pistons and ventilated rings, etc.

Pistons, joint workers with rings, are subject to the same failings and a few of their own. Grooves and chamfers are cut to hold oil scraped by rings. But these do not suffice in all cases and it is necessary to drill drain holes in the chamfers and from ring

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TEARING THE MASK FROM OIL THIEVES

UPWARD FLUSHING REDUCES COOLING SYSTEM TROUBLES

Operation Can Be Accomplished Easily With Radiator in Chassis

WHILE the truck cooling system of today is a considerable improvement over the system of a few years ago, the operator must still do his part. The cooling system requires maintenance just like any other part of the truck. Neglect in this department means a higher average per mile haulage cost.

At one time it was almost impossible to keep a truck cooling system clean and tight, but most operators were not duly agitated.

The general practice seems to have been to drive a radiator until it became clogged or broken beyond repair, then junk it in favor of a new one. An absurd and expensive procedure in view of the equipment which has now been developed and with which most radiators can be repaired, cleaned and prepared for service in a very short time and at a comparatively small expense.

An operator doesn't drive a truck until the valves burn off, nor does he neglect the oil until the motor sticks up.

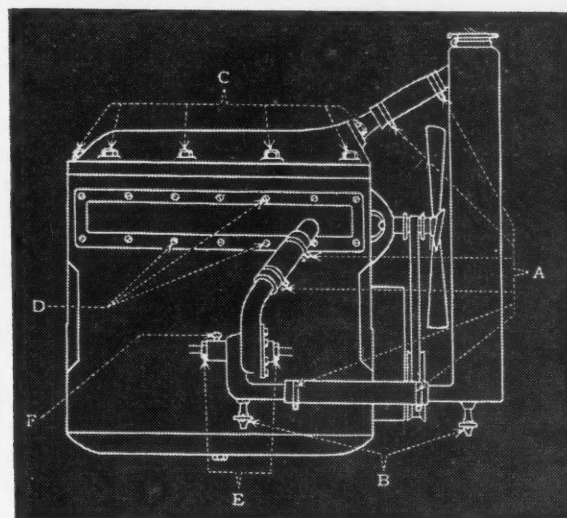
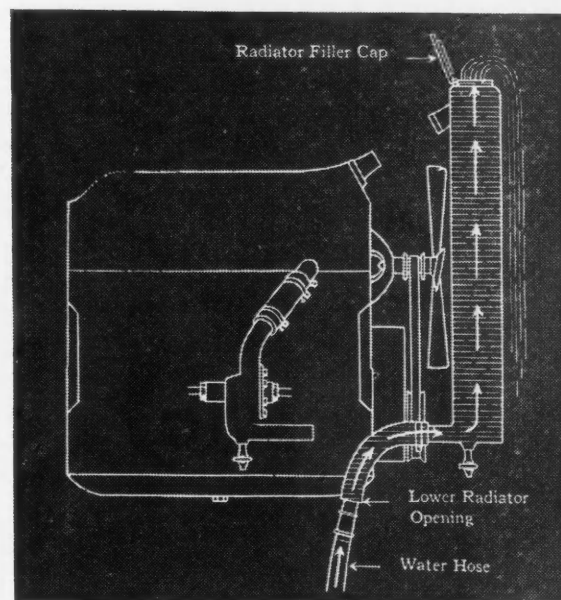
So it should be with the cooling system. Rubber hoses are comparatively short lived in trucking service; high speed water pumps wear packings; road shocks, strain and driving vibrations break radiators; gaskets have a curtailed period of efficiency and water passages accumulate rust and scale which reduce cooling efficiency. Failures in these parts cause loss of solution which, in turn, results in overheated engines, deteriorated lubricating oils, loss of power, possibly expensive hang-ups and most certainly a generally less efficient powerplant.

It is neither difficult, time-consuming nor expensive to clean a truck cooling system. All the equipment required is a combined air and water nozzle, a water hose, an air line and a supply of a standard cleaning compound or an alkali such as washing soda. Cleaning procedure is as follows:

Open the lower hose connection and the drain cock (see Fig. 1). This insures rapid and complete drainage. Connect the opened hose and close the drain cock. Place the cleaning compound in the system according to directions given on the container. If soda is used, mix $\frac{1}{2}$ lb. to each gallon of water.

Start the engine and with a cover over the radiator to cut off air, run at a medium speed until hot, about 180 deg. Continue for between 20 and 30 minutes. Stop engine.

Disconnect lower hose connection and drain as done originally. Place the air and water nozzle in the opened hose connection and flush the system in a direction opposite to normal flow. Care should be taken



Top—When flushing turn water on gradually

Bottom—Showing parts of cooling system that should be tightened. A—hose clamps; B—drain cocks; C—cylinder head bolts; D—expansion plate bolts; E—water pump packing; F—grease cups or fittings on water pump

not to build up too high an air pressure in the cooling system or a burst radiator may result. The air jack should be applied to the valve on the nozzle only for a few seconds at a time, just long enough to impulse the water stream.

About 10 min. of this will usually clean out the greater portion of the rust sediment and scale and leave the cooling system clean, as will be indicated by the clearness of the exhaust stream.

THE AGONY CORNER



SERVICE TROUBLES SOLVED THIS MONTH

1. Ring and Valve Wear
2. Timing F4 Reo
3. Clutch Drag
4. Ignition Puzzle

particles of dust will work into any small opening. Worn throttle valve shafts and bearings can admit dust. Even the small quantity of unfiltered air entering a carburetor during idling may carry enough abrasive to cause trouble. Finally dust may work under the valve cover and be drawn down the intake valve guides.

Conditions may call for cleaning the

1. RING AND VALVE WEAR

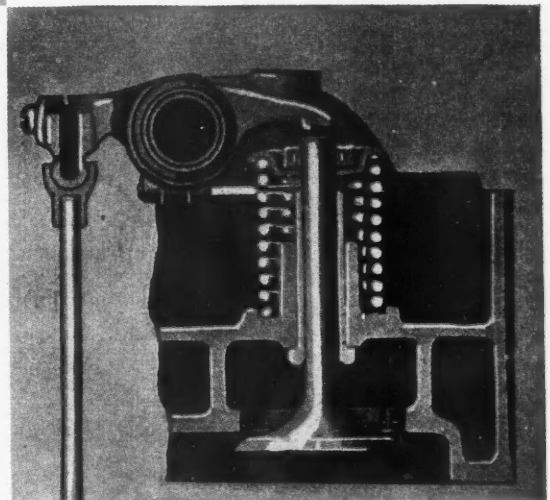
A LARGE fleet owner, in a foreign country, is experiencing trouble because of excessive wear of piston rings and short life of intake valves on Reo T6 engines in 3-ton G and GA trucks.

Piston rings wear out in about 5000 to 6000 miles, sometimes less. Intake valves wear up into the heads and show a particularly crooked seat when removed. Seven different makes of piston rings have been used with "practically the same results." Trucks are fitted with Model S Schebler carburetors, which are correctly adjusted, and are equipped with air cleaners. Valve and ignition timing are checked regularly.

- Eliminating possible causes of this trouble, one by one, leaves en-

trance of dust into the engine as the most likely cause. Ring wear alone might be due to rings themselves. But seven makes give the same results and rings cannot cause wear of intake valve stems, faces and seats. The fact that intake valves are giving trouble and exhaust are not shows that the trouble lies in the intake system. If dust is drawn into an engine through the carburetor or manifold, intake valves and piston rings wear rapidly.

Use of air cleaners is a point against the dust explanation. However, in very dusty sections, fine



air cleaner every 25 or 50 miles instead of at 500-mile intervals, as ordinarily recommended.

Examine the engine oil pan thoroughly and, if necessary, have a sample of oil analyzed just before draining to refill with new oil. If dust is, in fact, being drawn into the engine, traces of it may be found in the engine oil pan. In similar cases dust has been found in depressions of the pan in the form of thin cakes.

FOR SERVICE MEN

2. TIMING F4 REO

A SERVICE station in New York State asks for valve and timing on the four-cylinder Reo Speedwagon.

● Flywheel on this engine is entirely exposed and therefore it is quite easy to check valve and ignition timing by flywheel marks. The flywheel is marked *U.D.C. 1&4*. Breaker points should just start to open, with spark retarded, when this line is opposite center punch mark on rear cylinder block.

Intake valve opens $2\frac{1}{2}$ in., measured on rim of flywheel, after upper dead center, with tappet clearance of .003 in. For convenience, we suggest that clearance be set to .007 in. and timing checked with a .004-in. feeler between valve and tappet. When this feeler is just gripped, the mark $2\frac{1}{2}$ in. from U.D.C. should be opposite center punch mark on cylinder block. After timing be sure to return tappet clearance to .003 in.



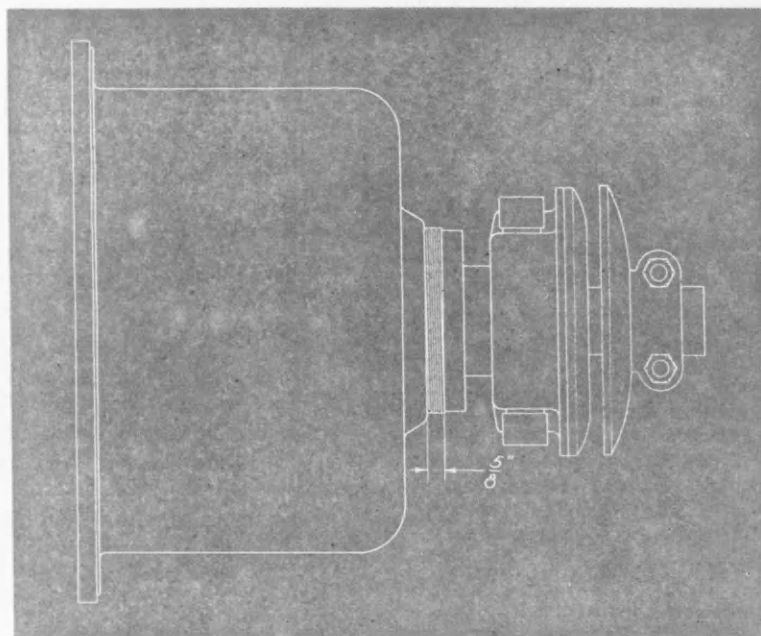
3. CLUTCH DRAG

FROM New Jersey comes reports of a clutch which drags so badly that "if you are moving the truck in first or reverse and stop, you can hardly force the shifting handle in neutral." The truck is a 1928 Sterling which is equipped with a multiple-disk

clutch running in oil. Trouble with dragging followed an overhaul of the clutch during which new plates were installed. The mechanic says that the clutch spring is not adjusted too tight, as the adjusting sleeve still has $1\frac{1}{4}$ in. of thread for further adjustment. Oil in the clutch is a light mineral oil, as specified, and level has been checked against truck manufacturer's recommendation.

● The adjusting sleeve should have about $\frac{5}{8}$ in. of thread exposed when properly adjusted. If it is out so far that $1\frac{1}{4}$ in. of thread is shown, the sleeve will strike the clutch throw-out bearing when clutch pedal is fully depressed. As the sleeve probably was screwed out this far in attempting to overcome dragging, it is evident that something else is at fault.

Misalignment of the flywheel housing is the probable cause of this trouble. If housing bolts are allowed to remain loose, both bolts and bolt holes are worn oval and tightening bolts again does not restore alignment.



Check alignment of flywheel, of housing and of clutch with a dial gage. First mount the dial gage on clutch housing and see if flywheel runs true, then mount dial gage on flywheel and see that housing is true within .003 in. Also make sure that clutch is properly mounted in flywheel.

4. IGNITION PUZZLE

THIRTY minutes or so was about all a certain engine would operate. It started off in fine style on the first trip after a repair job, but went dead in less than an hour. When the trouble shooter arrived he found no spark and towed the job back to the shop. All tests provided by a complete test bench showed coil, distributor and condenser okay. So the ignition system was replaced and the engine ran. But on the next trip it stopped again. Ritual of towing, testing

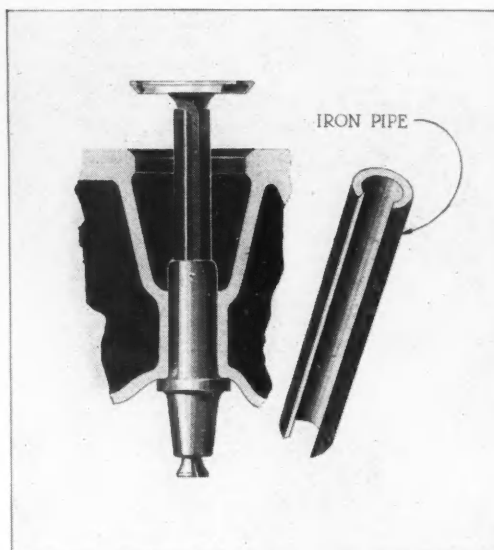
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SERVICE HINTS FROM SHOP AND FACTORY

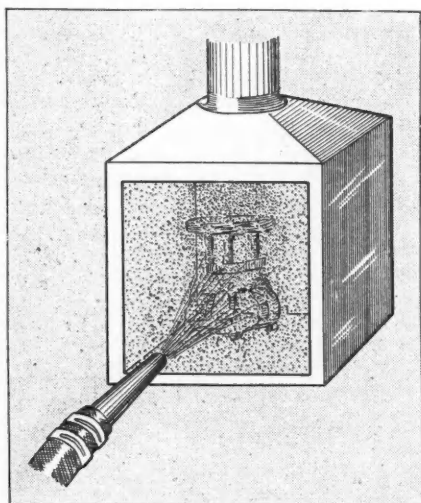
\$5 IDEAS FOR SERVICE HINTS FROM SHOP MEN ARE WELCOME. TELL ALL ABOUT THE IDEA IN SHOP TERMS AND SEND DRAWING OR PHOTO. FIVE DOLLARS WILL BE PAID SUCCESSFUL CONTRIBUTORS.

THE HINT OF THE MONTH



Soldering Cast Iron

CAST-IRON surfaces cannot be tinned readily, and therefore it is almost impossible to do a satisfactory job of soldering on this metal,



and babbitting of line shaft bearings and other parts is more difficult.

H. W. Swope, Danville, Pa., reports that sand blasting prepares iron for tinning and soldering. It appears to remove carbon from cast iron and leave a smooth, bright and clean surface. Sand blasting also is effective in preparing surfaces for welding. Regular soldering flux is used for jobs on sand-blasted surfaces.

September, 1930

Fish Hook

A TOOL which can easily be made in the shop and which saves much time and trouble in reaching into out-of-the-way places in engines and transmissions is used by H. M. Blair, Pittsburgh, Pa. It comprises a piece of copper tubing with a handle on either side of the top, like those in a pair of scissors, through which piano wire is passed to engage with a loop of piano wire at the end.

In use, the loop on the end of the long piano wire is pushed forward, releasing the two ends of the forked wire. When the wire touches the part to be removed, the piano wire is drawn up the tube, like a carburetor choke wire, until the forked piano wire grips the part tightly. The copper tube can be bent into any sort of curve required to reach the part.

Ford Valve Remover

Sticking valve stems in a Model A Ford engine will make a mechanic speak in language ordinarily reserved for balky mules. W. C. Burgan, San Diego, Calif., suggests a way of doing the job and saving cuss words.

Cut a slot slightly wider than the valve stem in a piece of 1/4-in. iron pipe, 2 1/2 in. long. Remove valve spring and washer in the customary way, then raise valve as high as it can be lifted and insert the slotted pipe over the valve stem, resting lower end upon valve guide. Then bump the top of the valve carefully with a hammer and block of wood and the guide will come out below.

Ignition Puzzle

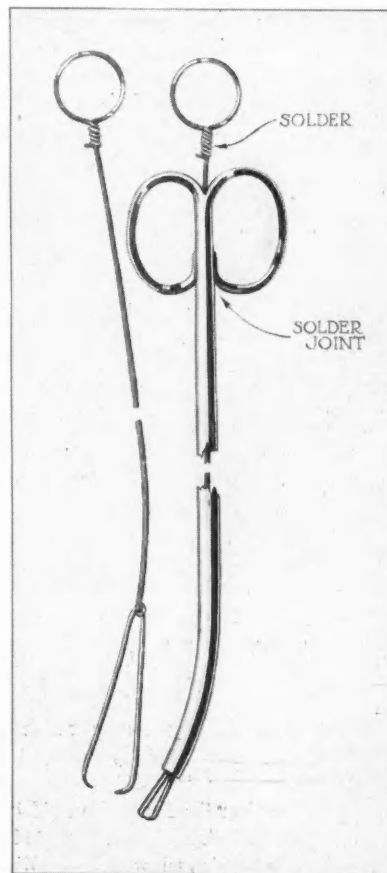
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ignition, replacing ignition units, starting engine was repeated. So was the starting and going dead.

● As a last resort the foreman installed a new coil, in spite of the fact that the coil in use passed all tests. The trouble was cured, the engine has not stopped on the road since.

The foreman reasoned that heat developed by operation of the engine caused the coil to go dead. It passed tests while cold, but on the road some hidden flaw shorted it.

Is he wrong?



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MAINTENANCE CHATTER



Chevrolet Parts

● Laminated shims for engine bearings and a one-piece valve cover gasket are now available as Chevrolet parts. Shims are supplied in sets for each bearing, including four and six-cylinder connecting rods and front, center and rear main bearings of both engines.

The one-piece valve cover gasket lists at 12 cents and may be ordered in any quantity from one up, there being no minimum package quantity.

I Dare You

● Traffic Cop—Who do you think you are, driving through town like that? Reckless driving, speeding, passing a red traffic light, almost hitting that kid. I'm telling you

that your driver's license will be revoked and that isn't all.

Driver—I am sorry about all that but you cannot revoke my driver's license.

Traffic Cop—We can't revoke your license, can't we? You just wait and see what happens when we get to headquarters. What makes you think that we can't and won't revoke your license?

Driver—I haven't any driver's license.

Use No Tools

● Wire wheels now offered on Chevrolets embody drop center rims. There are no detachable rings or locking devices. The factory advises that tires be changed without using tools. In fact, the warning "Caution: Use No Tools" appears three times in a bulletin on the new wheels and the variation "No tool is necessary or advisable" is used once.

Those who drove automobiles before the days of demountable rims remember that fixing a puncture called for use of an armful of broken spring leaves, chisels and screwdrivers plus grim determination and a flow of cuss words.

Diamond T Brake Drums

● Cast alloy iron brake drums are now furnished as standard equipment on rear wheels of all models of Diamond T trucks of two tons capacity or more, including Models 303, 551, 503, 506, 602, 606, 700, 801, 1000, 1200, 1600, 1601 and 2500.

The Foreman Hints

● Foreman—Mac, I see you have your golf overalls on today.

Helper—What do you mean, golf overalls?

Foreman—The suit with eighteen holes in it.

For the Boys in the Back Room and the Men Who Work in Glass Cages

Believe It or Go There

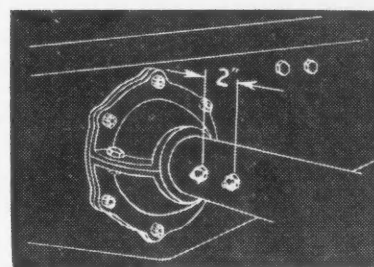
● Kerosene froze solid during cold spells at Little America, Antarctica, according to Commander Byrd, in charge of the expedition to the South Pole. Another effect of the cold was that sandwiches froze stiff and had to be thawed on exhaust manifolds before they could be eaten for lunch.

We wonder what the tappet clearance was at 75 below zero.

Ford Adds Lubricator

● Another lubricator has been added to the Ford AA truck torque tube. This fitting, which is installed just back of the universal joint ball cap, permits lubricant to flow directly to the universal joint without first passing through the bearing.

Torque tubes now carry an



Location of Fitting

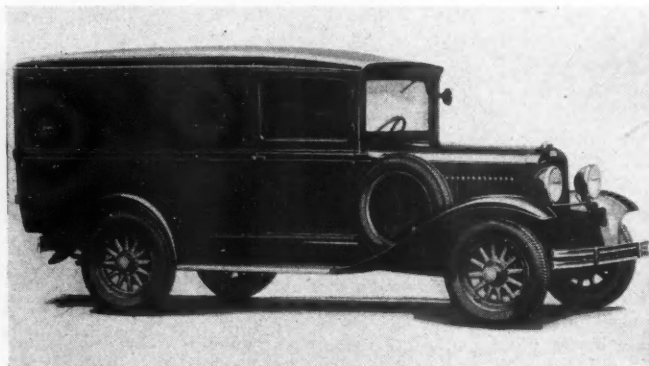
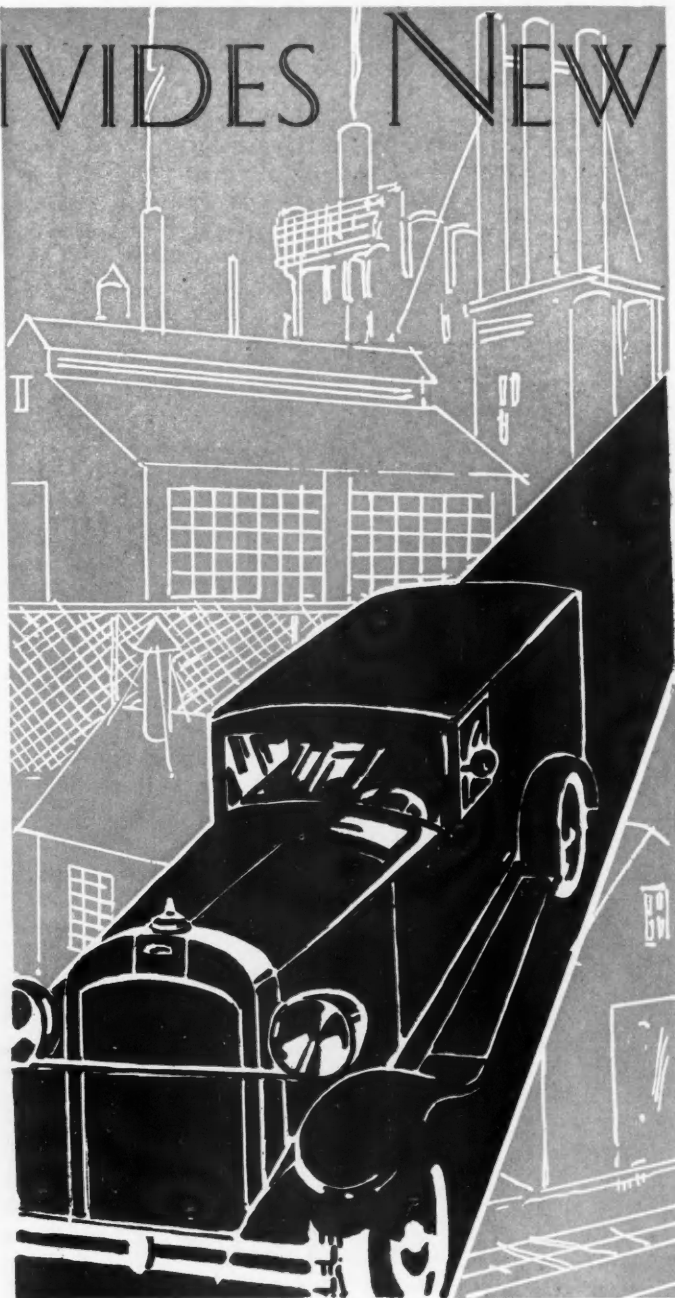
extra boss for the fitting. Torque tubes now in use, or in stock, may be equipped with the additional fitting. Drill a 21/64 hole exactly 2 in. forward of the center of the hole for the present fitting and tap 1/8 in. taper pipe thread. This taper thread will make the lower end of the threaded hole just a little undersize and thus prevent the end of the lubricator from sticking down into the housing.

DODGE DIVIDES NEW

IN recognition of the changes truck merchandising has been undergoing and which changes have practically resulted in the separation of most trucks into two groups, Dodge Brothers Corp. has announced a new line of trucks composed of two distinct groups of vehicles covering 11 chassis and 53 models when permissible tire variations are taken into account. The first of these, the Standard line, includes two ½-ton and two 1½-ton models, a four-cylinder and a six-cylinder in both cases, is designed to compete with the so-called popular priced commercial vehicles. The second line, ranging from 1½ to 3 tons nominal rating, inclusive, is designated as the heavy-duty group. Outstanding features of the Standard line are: new low prices, full floating axles and cast alloy iron brake drums, four-speed truck type transmissions on the 1½-ton, and new low-priced steel cabs, heavy frames and excellent performance. The ½-ton models have three transmissions and semi-floating rears. A full line of standard bodies is provided for the models in this group, with prices ranging from \$625 for the ½-ton four-cylinder canopy model to \$875 for the panel body 1½-ton four-cylinder truck. The six-cylinder editions of the ½ and 1½-ton Standard line are offered at \$100 additional cost for all models as compared with the four-cylinder line.

In connection with this new line of trucks, Dodge Brothers has developed a method for specifying maximum gross laden weight rating of all models. To this end a wide range of standard tire options covering both balloon and high pressure has been made available, and the maximum weights at both front and rear have been determined for the truck for each definite tire size. These weights are specified on a steel plate attached to the dash of the truck in the cab, with a statement that the warranty will be voided if the specified weights are exceeded for the various tire sizes.

For instance, on the 3-ton 170-in. wheelbase chassis, the maximum gross weight for which the truck has been designed is 4029 lb. on the front and 15,400 lb. on the rear. This corresponds with the figures given on the dash plate for 9.00/20 balloon tires, dual at the



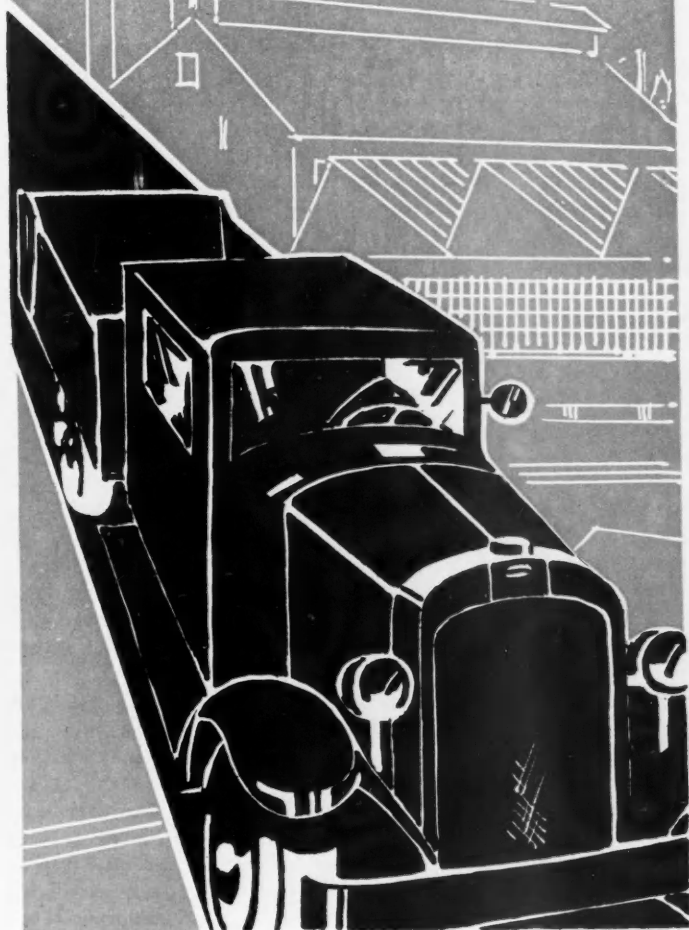
The 1½-ton panel delivery with four-cylinder engine lists at \$645. Interior dimensions: length, 70 in.; width, 51¾ in., and height, 50 in.

SPECIFICATIONS OF

Model	UF-10	F-10	UF-30	F-30
Price	.....	.....	\$595	\$695
Wheelbase	109	109	136	136
Capacity, tons	½	½	1½	1½
Max. payload is	1200	1200	4000	4000
With body allowance	900	900	1250	1250
And tire section	5.00	5.25	5.00D	5.00D
Standard tire section	5.00	5.25	6 in.	6 in.
Engine, size	4-3½	6-3½	4-3½	6-3½
	x 4½	x 4½	x 4½	x 4½
Transmission speeds	3	3	4	4
Rear axle, type	semi	semi	full	full
Drive	bevel	bevel	bevel	bevel
Ratio	4.66	4.66	5.67	5.67
Service brake	Four-wheel	Four-wheel
Hand brake	band	band	band	band
Booster	no	no	no	no

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TRUCKS INTO 2 LINES



Standard Group Covers Popular-Priced Field and Second Group, Heavy Duty

rear. With a "normal" body and cab allowance of 1900 lb. and the chassis weight of 5729 lb., this would leave a maximum payload allowance of 11,800 lb. or almost six tons, giving an idea of the conservative tonnage classification of the new heavy-duty line.

Other features of the heavy duty line include high-power sixes; straight or double drop frames on the 2 and 3-ton models; large brakes equipped with BK boosters; five-stage rear springs; large 3-in. exhaust pipes; provision of cooling fins on the oil pans; 19-in. fan, twin-belt driven, and the adoption of an adjustable driver's seat-back in the cab.

In the establishment of the new gross rating method, Dodge Brothers states that it is receiving the cooperation of tire manufacturers. Five tire options are offered on each chassis model of the 2 and 3-ton trucks, with four tire options on the two 1½-ton chassis of the heavy-duty line. In the Standard line five options are again available on either of the 1½-ton chassis, while two tire options are offered on the ½-ton, four-cylinder series.

The low prices on the Standard line have largely been made possible through the use of the Plymouth engine. In anticipation of this move, the Plymouth engine when recently changed was modified to adapt it to truck as well as passenger car use.

NEW DODGE LINE

F-35	F-36	F-40	F-41	F-60	F-61	F-62
\$1,425	\$1,485	\$1,995	\$2,085	\$2,645	\$2,575	\$2,695
140	165	150	165	146	170	195
1½	1½	2	2	3	3	3
4700	4700	7540	7250	10,850	11,800	11,150
1500	1700	1600	1800	2500	1900	2200
6.00D	6.00D	8.25D	8.25D	9.00D	9.00D	9.00D
6.00D	6.00D	6.50D	6.50D	6-D	6-D	6-D
6-3%	6-3%	6-3%	6-3%	6-3%	6-3%	6-3%
x 3%	x 3%	x 5	x 5	x 5	x 5	x 5
4	4	4	4	4	4	4
full	full	full	full	full	full	full
bevel	bevel	bevel	bevel	double reduction	bevel	bevel
6.375	6.375	6.375	6.375	8.436	7.125	7.125
hydraulic	hydraulic	disk	disk	disk	disk	disk
band	band	no	no	yes	yes	yes
no	no	no	no	yes	yes	yes

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Double-reduction axles are standard on the Model F-60 3-ton, short-wheelbase truck. Note new radiator design and attractive cab

September, 1930

The engine has full pressure lubrication, a cooling capacity designed to comply with truck requirements, and develops 48 hp. at 2800 r.p.m.

The 1½-ton models carry a 10-in. single-plate clutch with ball bearing release. A standard SAE opening for the installation of a power take-off is provided on the four-speed transmission. Internal hydraulic brakes are standard on this, as well as all other Dodge Brothers truck models. A departure from conventional practice is the adoption of cast alloy iron drums.

Low prices for the six-cylinder models of the Standard line are similarly due partly to the use of the Dodge Six engine. The six develops a maximum of 61 hp. at 3400 r.p.m. A large factor in reducing vibration is in the use of aluminum alloy pistons throughout.

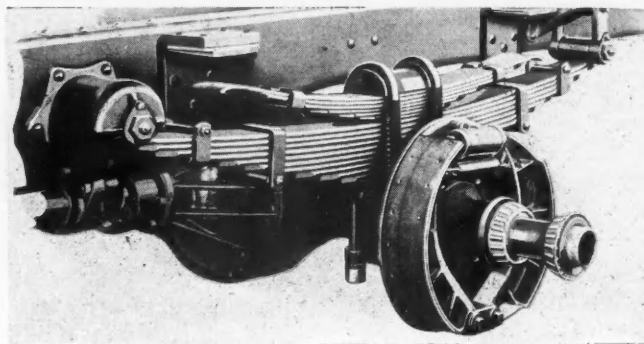
The Heavy Duty line covers three nominal ratings, 1½-ton, 2-ton and 3-ton. Actual pay loads, as already pointed out, may range as high as six tons, and still remain within the warranty rating of the truck. Two of the chassis which cover the heavy duty 1½ range, up to a possible maximum of nearly 2½ tons. Both have straight frames.

Both the 2 and 3-ton series models are powered with a six-cylinder, 310 cu. in. displacement engine. This engine, designed in its original form for the highest-priced passenger car produced by the Chrysler Corp., the Chrysler Imperial, has been widely redesigned for truck work, including larger exhaust pipes, cooling fins on the engine oil pan, and an improved cooling system generally, including a 19-in. fan driven by two belts. Governors are provided also for engine speed.

The engine is of L-head design and develops a maximum of 96 hp. at 3000 r.p.m., it is stated, with a compression ratio of 4.7 to 1. It is mounted at four points in the chassis, front supports being of the spring type, with rigid mountings at the rear.

Pistons are of the Invar strut Nelson type and carry five rings, the

View of the full-floating rear axle and spring design on the 3-ton Model F-62 Dodge Brothers truck



lowest of which is of the oil-control type, with tongue and groove type compression rings for the upper four. The seven-bearing crankshafts have 97 sq. in. of bearing surface and weigh approximately 100 lb. Engine lubrication is by pressure to main, crankpin and camshaft bearings as well as to the front end chain drive. Oil passages are drilled in the block and upper crankcase. Such further features as crankcase ventilation, oil-wetted wire mesh air cleaner, and oil and gasoline filters are also provided. Fuel feed is by a variable stroke diaphragm type pump drive off the camshaft. An engine heat indicator is mounted on the dash.

Single-plate 13-in. clutches are provided on both the 2 and 3-ton series.

The four-speed transmissions are mounted in unit with the engine. With a 6.375 to 1 reduction in the 2-ton and an 8.436 to 1 ratio on the double reduction 3-ton axle, this transmission provides for an overall reduction in low of approximately 44 to 1 and 58 to 1, respectively.

The double-reduction axle mentioned is standard equipment on the 146-in. short wheelbase 3-ton range and is available at slightly extra cost on all other 3-ton models, as well as on the 2-ton.

On the 2 and 3-ton models there is also an unusual spring design to provide increasing spring re-

sistance or stiffness with increasing load. During a spring deflection, the first stage is taken care of entirely by the main spring, which is 3½ in. wide. Next one end of the helper spring contacts against a frame bracket, and when the other end of the helper spring contacts its bracket, the third stage is entered. If deflection continues, the top leaf of the main spring will contact one end of the helper spring bottom leaf, and build up further resistance to deflection as a fourth stage. The fifth stage is reached when the main spring top leaf contacts the other end of the helper.

Frames on the models are provided with an exceptionally heavy box-type cross-member located at the front shackle of the rear spring, and gusseted to both upper and lower frame flanges. A cross-member is also located at the rear shackle, so that frame deflection under spring loads should be greatly minimized. Incidentally, the frames on the 2 and 3-ton models have 10-in. deep side channels.

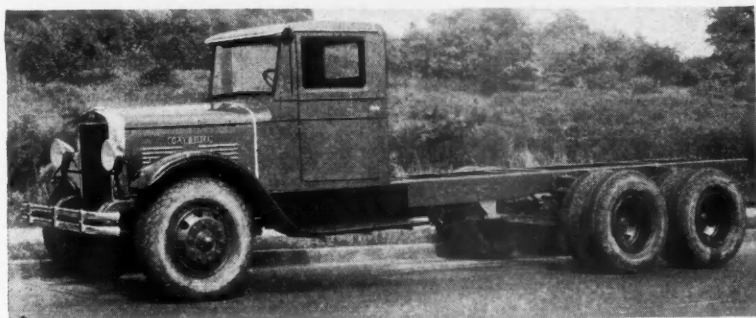
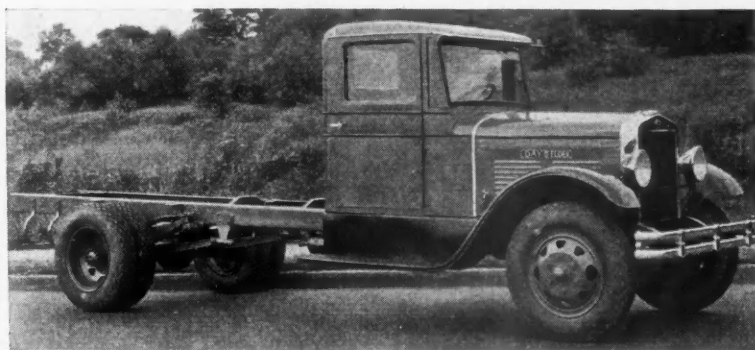
Malleable iron spoke wheels are standard on the 2 and 3-ton series. Spare tires are carried on straight frame models under the frame at the rear. On trucks with double drop frames a compartment for carrying tires is provided at one side of the frame just back of the cab, balanced at the opposite side by a large tool box.

In connection with the announcement of the new Dodge truck line, some important distribution and merchandising changes have been put into effect. Of primary interest is the establishing of 85 depots or warehouses, each under the control of the dealers in the particular territory, with the cooperation of the factory. Each depot will keep available a full line of heavy-duty trucks for delivery and display, thereby relieving the dealer of the necessity of carrying an extensive floor display of Dodge trucks. In addition, the depots will carry complete stocks of replacement parts, accessories and a line of representative bodies.

Dodge Brothers Corp. is also building up its special equipment division to a point where it will be able to supply for any model of both lines any type of body or equipment which may be desired. In this project Dodge is working cooperatively with prominent body and equipment manufacturers to insure a complete coverage of the field.

DODGE DIVIDES NEW TRUCKS INTO 2 LINES

NEW DAY-ELDER LINE HAS ELEVEN MODELS



The new Day-Elder line is at once graceful in lines and sturdy of construction. The top view is that of the 3-ton Model 160 and the lower, of the 8-ton Model 285 six-wheel chassis

Four-Wheelers Offered in 1 to 5-Ton Range and Six-Wheelers from 8 to 12

presents attractive streamline effect much along the lines of present-day passenger car design. Fixtures are chromium-plated throughout, including radiators, head lamps, bumpers, door handles, hub caps, etc. Cabs are of the inclosed all-weather de luxe type with seats upholstered in genuine leather and appointed with such items as cigar lighter, automatic windshield wiper and speedometer in modernistic design.

While powered entirely by Continentals, all but the 1, 1½, 2 and 12-tonners are furnished with R type engines. Unit powerplants are employed on all the four-wheelers except the 5-ton model, which together with the six-wheelers have amidships mounted transmissions. Brown-Lipe disk-type clutches are used throughout except in the two lighter models where plate type Borg & Beck are employed. The two light models again depart from the regular line-up in the use of Warner Gear transmissions, while Brown-Lipe characterize the rest of the line. All provide four speeds in the four-wheelers and seven in the six-wheelers.

Final drive is through Timken bevel and worm drive axles, bevels being employed in the first four models and worms in the remainder with SW tandems in the six-wheelers. While four-wheel internal brakes feature the entire line, mechanically operated Bendix are furnished in the two light models, Lockheed hydraulic in the next six and air in the last two.

Hand brakes operate on the propeller shafts, through shoes contracting on drums in the first four models and disks in the remaining models. Springs are silico-manganese semi-elliptic with helper springs mounted over the rears, and frames are of semi-flexible pressed steel.

A COMPLETE line of four- and six-wheel Day-Elder trucks is announced by the National Motors Mfg. Co., Irvington, N. J. Designated as Super Service Sixes, the line comprises 11 models: seven four-wheelers ranging from 1 to 5 tons capacity inclusive, three six-wheelers rated at 8, 10 and 12 tons, and one 20-passenger bus.

Standardization of assembly characterizes the entire line. Make of units, which are well known and of the latest design, are largely the same throughout

the range, varying only in capacity. Every model is equipped with a Continental six-cylinder engine, Delco-Remy starting and lighting, Zenith carburetor, Ross steering, four-wheel brakes, Timken rear axle, balloon tires, air cleaner, fuel pump and stop light.

In designing the new line, particular attention was given to external effects, with a view of combining the attributes of attractive appearance, driver comfort and performance. From bumper to stop light, each model

Specifications of New Day-Elder Line

Model	60	85	110	130	160	200	240	285	345	402
Capacities	1 ton	1½ tons	2 tons	2½ tons	3 tons	4 tons	5 tons	8 tons	10 tons	12 tons
Price	\$1,195	\$1,645	\$2,095	\$2,895	\$3,695	\$4,295	\$5,500	\$6,000	\$7,500	\$8,500
Wheelbase, standard	135 in.	135 in.	156 in.	150 in.	156 in.	156 in.	162 in.	164 in.	164 in.	164 in.
Engine, make	Con. 25A	Con. 16C	Con. 16C	Con. 16 R	Con. 18 R	Con. 18 R	Con. 21R	Con. 21R	Con. 21R	Con. 16H
size	6-3¾ x 4	6-3¾ x 4¾	6-3¾ x 4¾	6-4 x 4½	6-4 x 4½	6-4¾ x 4¾	6-4¾ x 4¾	6-4¾ x 4¾	6-4¾ x 4¾	6-4¾ x 5¾

For greater specification details, see table beginning on page 65.

CYLINDER PACKS SPEED

ENGINE REPAIR STANDARDS

CYLINDER
Size 6-3 5/8 x 4 1/2 in.

MAIN BEARINGS
Number 7
Diametral clearance002-.003
Type Non-adjustable

Bearing controls end play of crankshaft... Rear
End clearance this bearing004-.006
End clearance other bearings 3/32

CONNECTING ROD BEARINGS
Diametral clearance0015-.0035
Wear before adjustment008
Total shim thickness012
Bearing shell Spun in rod

PISTONS
Material Iron
Pin fastening Floats
Clearance in cylinder0035-.0045
Ring groove clearance0015
Ring gap025-.030
Oversizes of pins005-.008

CAMSHAFT BEARINGS
No. 7
Diametral clearance0025

VALVES
Inlet guide clearance0015-.0035
Exhaust guide clearance0015-.0035
Seat width 3/32
Lifter clearance operating010-.012
Inlet valve opens 10 deg. after U.D.C.
Exhaust valve closes 15 deg. after U.D.C.
Timing with clearance of015

IGNITION
Distributor point gap018-.024
Magnet point gap015-.018
Spark plug gap020-.025
Timing, distributor Open 10 deg. before U.D.C. advanced
Timing, magnet Open U.D.C. retarded

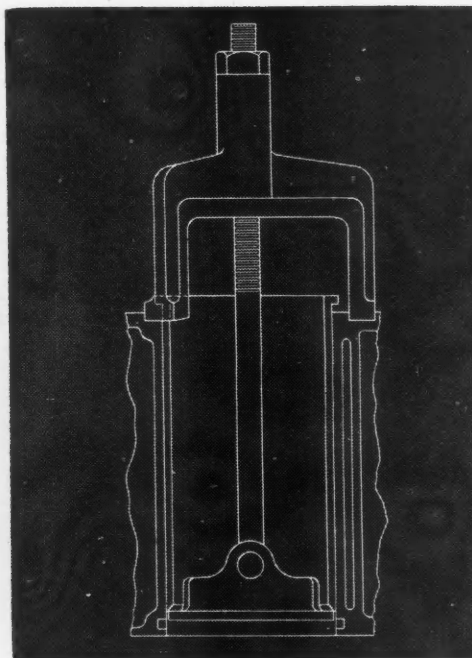
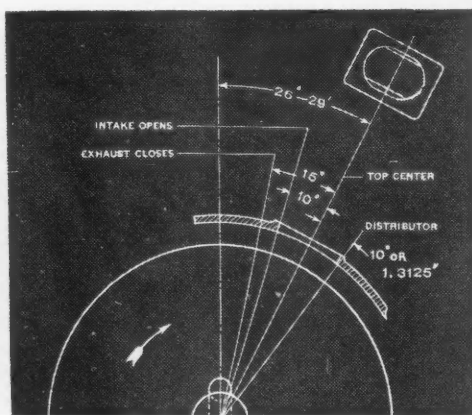
OIL PRESSURE
Minimum 10 lb. idling
Maximum 40 lb.

Packs for A-4 and A-5 Sixes Comprise Sleeve Fitted With Piston, Rings, Pin and Lower Packing

THE six-cylinder engine used in International Harvester Models A-4 and A-5 embodies many features of special interest to maintenance men. Cylinder sleeves are removable, three types of pistons provide standard and two higher compression ratios for high altitudes, two types of high tension magneto are supplied at extra cost in place of standard battery distributor, main bearings are lubricated by passages leading from camshaft bearings and intake and exhaust valves are not the same size.

Repairing a worn or scored cylinder, or set of cylinders, requires neither honing nor fitting of pistons to cylinder bores. The cylinder sleeve is withdrawn by a puller, which fits cylinders of four-cylinder engines. A cylinder pack, comprising sleeve with fitted piston, rings and pin and lower packing is then installed in place of the old sleeve. These packs may be obtained from IHC dealers and branches.

Standard pistons are installed in engines for regular production but two other types are available for trucks operating in high altitudes. One special type is designed for 5000 ft. altitude, the other for 10,000 ft. levels.



At right—Pistons and connecting rod assemblies are withdrawn from below in the International Harvester six-cylinder A engine. The overhead valves which are carried in a removable cylinder head are fully inclosed

At left—Cylinder sleeves may be removed without trouble by making use of special puller which fits all IHC engines of this type

At far left—Valve and ignition timing looking from the crank end of the engine

I H C ENGINE

Standard ignition equipment is a Delco-Remy battery distributor, of semi-automatic advance type. Either American Bosch or Robert Bosch high tension magnetos are supplied on order, at extra cost. Both magnetos are equipped with impulse starters. Difference in setting of breaker points and in timing ignition between distributor and magnetos is shown in the accompanying table.

Main and connecting rod bearings and camshaft bushings are furnished in undersizes for re-ground shafts, in addition to standard sizes. Main bearings, which are interchangeable, non-adjustable type and connecting rod bearings, which are integral with rods, are supplied in .020 undersize and in standard size. Camshaft bushings are listed standard and .010 undersize.

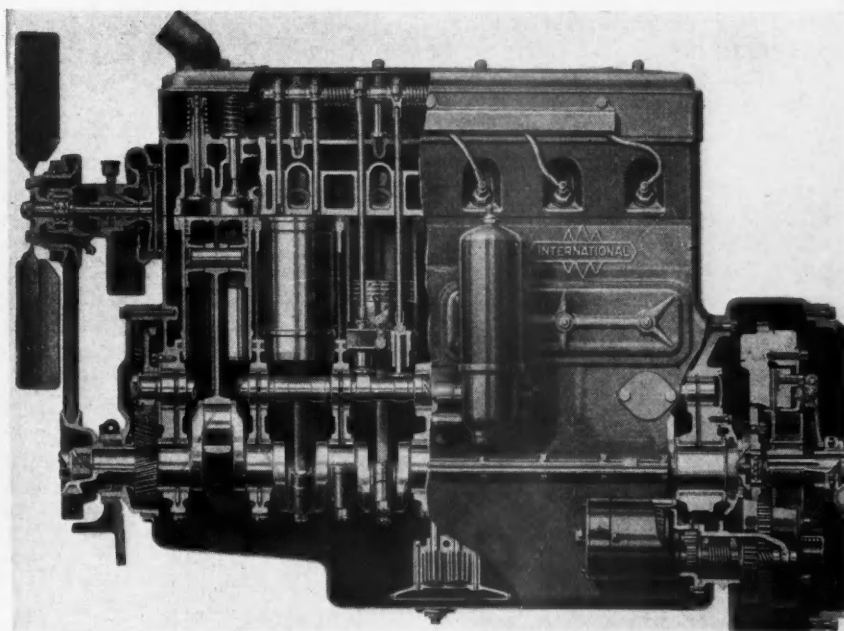
Valve and ignition timing are set by reference to flywheel marking. Inspection hole is on side of flywheel housing and mark of U.D.C. applies to cylinder No. 1. Intake

opens 10 deg. after upper dead center, which equals 1.3125 in. measured on flywheel rim. Exhaust closes 15 deg. after top dead center. Valve timing is checked with tappet clearance of .016 in. which is not the correct operating clearance. Ignition timing point is 10 deg. before top dead center. Timing positions are shown in the diagrammatic illustration on the preceding page.

Piston pins float in rods and in pistons. For service work .005 and .008 in. oversize pins are listed. Connecting rod and piston assemblies are removed from below.

Camshaft is carried in seven bearings and the shaft itself serves as main oil header for the pressure lubrication system. A groove in each camshaft journal carries oil to a lead for the corresponding crankshaft journal.

The factory recommends extra heavy oil, S.A.E. viscosity No. 50, for summer, and a medium oil, S.A.E. viscosity No. 20, for winter operation.



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and Operation & Maintenance*



WHAT HOLDS THE REAR AXLE ON?

CONTINUED FROM PAGE 23

mit the power. It also applies to many of the trucks.

"How about all this semi, three-quarter and full business?" Mac interrupts.

"I'm just getting to that," we answer. "As I so clearly explained to you before, a live axle differs chiefly from a dead one in that the axle housing takes over some of the work of carrying the load. The extent to which it absorbs the various stresses determines the amount of float of the axle shafts. If these shafts do nothing but transmit the driving power the axle is full-floating. If, as in the old Model T, the axle shafts also carry all the load in addition to the power stresses, the axle would be called non-floating. In between are other axles carrying varying proportions of non-driving loads."

W ● Shafts Need Help ●

HY have an axle housing at all, if the shafts can be made to do all the work?" asks Mac.

"Why put a brick facing on a frame house?" we counter.

"It keeps the hot air in in the summer and the cold air in during the winter," Mac says. "And also it looks better, and it does help to stiffen the whole thing up some."

"99 44/100 per cent correct for axle too, Mac," we state. "But in some houses the bricks really have a load-carrying job to do, just as in axles. And if it's a good size building there also is a steel framework. The bigger the house or the axle, the greater the danger of over-stressing any one part. In an axle for a real big truck, the shaft has plenty to do just transmitting the power. It's a case of letting George do some of the chores."

"Well," says Mac, "all the half, three-quarter, fifteen-sixteenth and one-half of one per cent axles look alike to me. I suppose they've all got shafts inside the housings."

"You've figured that one out right, Mac," we try to cheer him up. "It isn't easy to see the difference unless you take them apart and differences between the types really depend on pretty small things, such as where you put the bearings, and how the wheels are mounted."

"Here (Fig. 1) is a sketch of a semi-floating axle. The wheels are rigidly attached to the axle shafts. Both the weight of the car and the

twisting on the axle due to the wheels trying to fold up when going around corners have to be taken by the shaft. Those shafts have as many things to worry about as you do on the first of the month. In this axle, as in the non-floating type, if the shaft breaks, you may have to go back down the road to pick up the wheel too. And the side stresses on the wheels are still carried by the axle shaft.

"If there is more load than you would like to have the shafts carry, and you don't want to make the shafts a lot bigger to take care of it, the next step is to take the wheel end bearing off the axle shaft and place it outside the housing, generally directly under the center of the wheel. This set-up we then call three-quarter floating. The direct weight load is now all removed from the shaft and is carried by the housing. But the wheel is still keyed to the shaft, and if it tried to fold up under the truck when going around a corner, as if it has just come out of a speakeasy, or if the axle housing is bent, the stresses to these conditions are still carried by the axle shafts. And if the shaft breaks, the broken end, wheel and all, is still likely to kiss the truck goodbye."

In the relay drive shown in Fig. 5, the wheels are carried on a dead axle but the weight is not carried directly on the axle, as in ordinary construction, but is carried down to a separate housing surrounding the axle drive shafts. So far as the drive at the wheels is concerned, there is a pinion and ring gear as in the interior gear drive but the Relay axle makes use of a pendulum principle for driving. But that is another story.

The way in which all loads are taken off the axle shaft without using a dead axle is to use the full-floating type of construction. In this design each rear wheel is mounted on two ball or roller bearings on the outside of the axle housing. These bearings are arranged to take thrust in both

TURN TO PAGE 52, PLEASE

Tearing the Mask From Oil Thieves

CONTINUED FROM PAGE 28

grooves. Drain holes are shown in Fig. 3 and Fig. 4.

Too much clearance between piston and cylinder wall causes a lot of oil pumping for which other parts

are unjustly blamed. Of course, it is possible for a ring to do more than its share of the work, but that does not release pistons from their responsibilities.

The first effect of too much clearance is that the film of oil on the cylinder wall is too thick. The lower edge of the piston scrapes excess oil off, leaving a film as thick as the space between piston skirt and cylinder wall. Oil control rings reduce this film to the desired depth. Obviously, if piston clearance permits this film to be twice as thick as normal the oil control ring has just that much more scraping and controlling to do.

Bent connecting rods cause an artificial condition of varying clearance, too much on one side and too little on the other, or too much at the top and not enough at the bottom. Plain evidence of this condition is given by wearing surfaces of the piston, bright in one place and black with carbon in others. Out-of-round and scored pistons also advertise their shortcomings by dark and light areas on pistons.

T ● Give the Ring a Break ●

TAPERED and out-of-round cylinders bring about oil pumping because they increase clearance between piston and cylinder wall and they make it difficult or impossible for a ring to conform to their varying surfaces. It is asking too much of a ring to expect it to change its shape and size four or five thousand times a minute. Many of them make excellent show-it was when the trip started. Engine over bumps at an average speed of 30 m.p.h. coming to a complete stop every 6 inches. That is what a ring does in a worn cylinder.

Distortion of cylinder bores under heat of operation of an engine is a cause of oil pumping in some engines which almost defies detection. When measurements are made with the engine cold everything is okay. But when the engine is hot, not warm but hot after miles and miles of travel at high speed, the cylinder is not the same shape and size throughout that it was when the trip started. Engine designers have practically licked this trouble in modern powerplants.

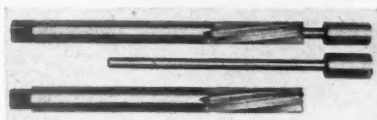
Poor oil or oil not adapted to the conditions under which it is used naturally causes loss. An oil which is quite satisfactory for 10 below zero might not do at all for wide-open operation at 100 in the shade. In detecting this particular culprit shopmen have able assistance from two sources, engine makers and oil refiners. Both groups maintain costly research to determine the sort of oil best adapted to any condition.

EQUIPMENT FOR THE SHOP



Kingpin Reamer

Alvord-Polk Tool Co., Millersburg, Pa., is making a reamer with an inserted pilot adapted for reaming kingpin holes on all trucks whose front-wheel brake construction makes it impossible to pass the reamer through



two aligned bushings. While the near bushing is being reamed the pilot, inserted in the second bushing, guides the cutting edges. When reaming the second bushing the pilot is removed and the reamer shank serves as the guide.

Transmission Hoist

Adjustable to all makes of trucks, the new transmission hoist brought out by Shepard & Moore, Inc., 1514 Prospect Ave., Cleveland, eases trans-



mission removals. Operable by one man it consists of a tubular arc mounted on roller feet, a ratchet wheel and lifting chain. It straddles the gap between body sills upon which it also may be rolled into position. The weight is 20 lb. and the price, \$13.80.

Bendix Wrench

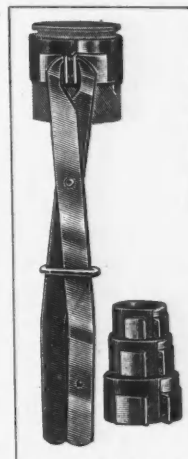
This is a new special 16-in., 12-point double-end box wrench supplied by the Bendix Service Corp. to fit anchor pin nuts of all Bendix duo-servo brakes between the sizes of 11 and 16 in. It is known as No. 2.



Piston Ring Compressor

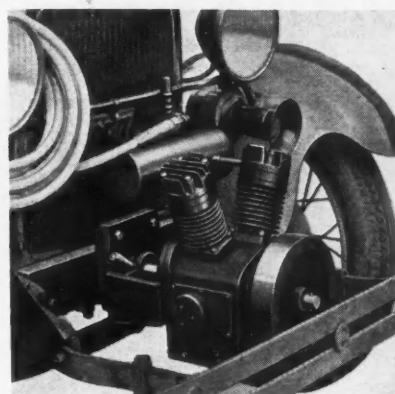
Allen Electric & Equipment Co., Kalamazoo, Mich., is offering a handy shop device for holding rings in position in piston, permitting easy installation of pistons from top or through bottom of cylinders. Set No. 21 consists of a pair of tongs and four bands to accommodate rings ranging from 2 5/8 in. to 4 1/2 in. and lists at \$2.

The tongs are long for leverage and possess a swivel action to permit easy manipulation at any angle.



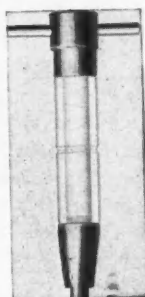
Portable Compressor

An air supply ready for instant use wherever and whenever needed is available when a service truck is equipped with the new portable air drum. It is designed for the use of compressor announced by the Globe Manufacturing Co., Battle Creek, Mich. The unit mounts on the front of the service car and is driven from



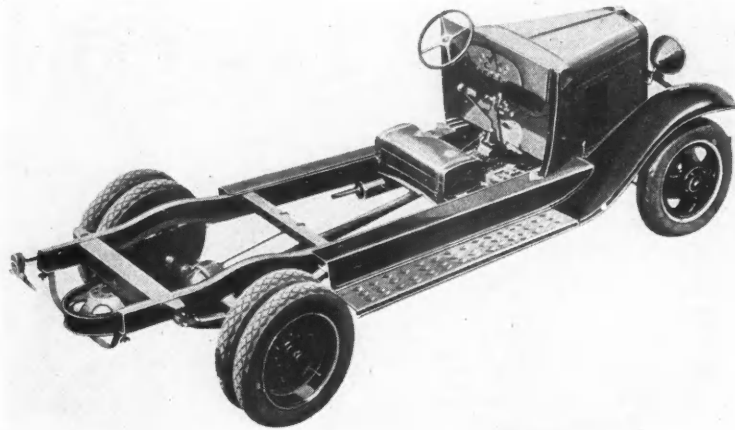
Piston Pin Tool

This tool, made by Stevens Walden, Inc., Worcester, Mass., is designed for quickly inserting and removing piston pins in Ford Model A. The tapered nose of the tool guides the pin past lock-ring in connecting rod. There are parallel flat surfaces on the tip so that it can be removed by a wrench. Price, \$1.50.

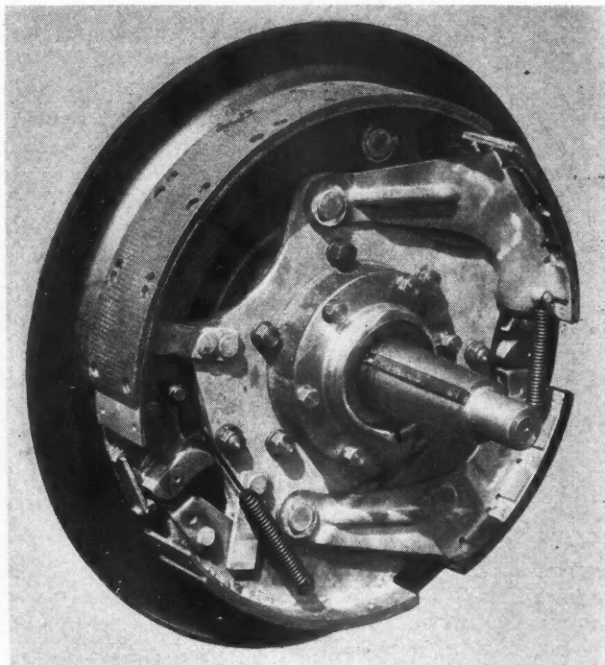


the engine crankshaft by a patented power take-off. When air is required it is only necessary to throw in a lever, which engages the compressor and starts the engine. The compressor is of the V twin-cylinder type of 2 in. bore and 2 1/2 in. stroke and capable of developing 200 lb. pressure.

CHEVROLET OFFERS DUALS ON 1½-TON AT \$25 EXTRA



Changes Include Heavier Axle, Steel Wheels and Larger Brakes



Top—This view of the Chevrolet 1½-ton truck shows the dual wheels which are supplied at \$25 extra. The webbed type pressed steel spoked wheels are the standard types now

Bottom—Rear brakes on the new Chevrolet are now of the internal articulated shoe type. The two larger shoes are for service, and the two smaller for emergency braking

CHANGES characterized as sufficiently important to call the 1½-ton Chevrolet truck a new model, have been announced by the Chevrolet Motor Co. Included in the changes are a heavier rear axle, new pressed steel wheels, internal expanding 4-wheel brakes of the articulated shoe type, and the optional provision of dual wheels.

Base price of the 1½-ton chassis remains unchanged at \$520, with an extra charge of \$25 for the dual wheels including six heavy-duty high-pressure tires. The new standard wheels are of webbed pressed steel, interchangeable front or rear and carry 30 x 5-in. six-ply tires. The axle is quite similar to the previous design, of semi-floating type with spiral bevel gears, but is specifically designed to withstand the additional loads imposed by increased carrying capacity with dual rear wheels. Axle shafts have been increased to 2 5/32 in. in diameter at the wheel bearings, and gears are heavier than formerly.

The brakes adopted for the Chevrolet 1½-ton truck are of the same type of design as those used on other Chevrolet models, except that they are of course larger, with 16-in. drums at the rear. Changes have also been made in the frame for increased strength. A new type cross-member has been added at the rear support of the gas tank, for instance, this member being of the U-type, with additional flanges at the bottom for rigidity.

According to H. J. Klingler, vice-president and general sales manager, the chassis is built complete with cab, while affiliations of Chevrolet with body manufacturers enable the purchaser to choose the exact type of body for the work to be done from a selection of 36 body types, the information being supplied by Chevrolet while bodies are to be supplied by the body manufacturers direct.

FEDERAL PUTS TANDEM AXLES ON THREE UNITS

Parts Interchange is Feature of New 6 and 8-Ton Six-Wheelers

ALTHOUGH a number of six-wheel trucks have been produced by the Federal Motor Truck Co. during the past few months, no official announcement of this fact has been made. The increasing demand for this type of truck, however, has led Federal to officially add a line of tandem-axle trucks to its regular products and offer them for general distribution.

The line consists of three models, the U6SW, rated at 6 tons and equipped with hydraulic brakes; the U6SWAB, with the same rating, but equipped with air brakes, and the 4C6SW, rated at 8 tons capacity. The tandem rear axle construction is of Timken manufacture, SW200 units being used on the U6 series and SW300W on the heavier model.

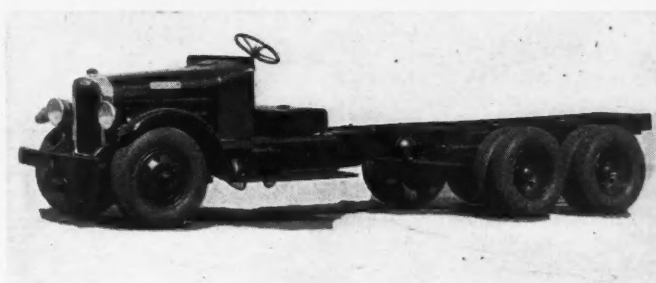
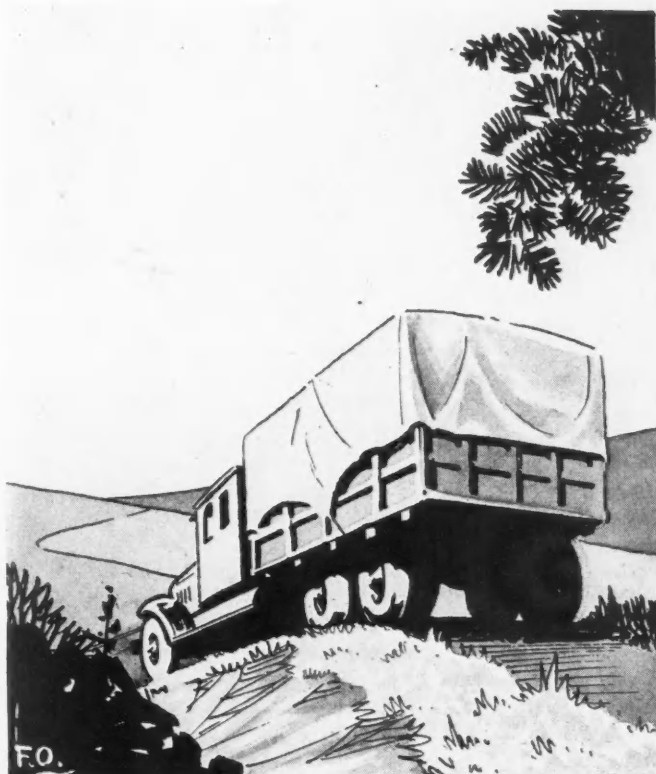
In introducing these trucks as few changes as possible have been made in the basic truck design in order to maintain maximum interchangeability of parts wherever possible. Thus the 4C6SW is virtually the 4C6AB truck with the tandem rear axle unit in place of the regular single axle. With the dual rear axles, however, capacity has been increased to a gross allowable weight of 34,000 lb.

The two U6 six-wheel models, however, have undergone some additional changes. Outstanding of these is the use of a larger Continental 20-R engine, rated at 90 hp. at 2200 r.p.m. It is of the six-cylinder valve-in-head type, with a bore and stroke of $4\frac{1}{4} \times 4\frac{3}{4}$ in. Crankshafts are of the seven-bearing type and 2 $\frac{1}{2}$ in. diameter. Ignition is of the dual type.

Frames on these models have been materially strengthened with the provision of additional inside brackets and reinforcements and the addition of outside fishplates. Dual wheels are used on both rear axles, and six-wheel hydraulic brakes are standard equipment on the U6SW. The U6SWAB, as has been mentioned, is equipped with six-wheel Westinghouse air brakes.

The Timken SW axles, it will be remembered, are of the full-floating, worm-drive type.

Included in the announcement of these trucks is a statement that a full line of Federal-built cabs and bodies are available to fit all chassis. To this end an addition was made to the Federal plant to permit building of any type of body for all Federal trucks.



Timken SW tandem units are employed in all three of Federal's new six-wheelers

Specifications of Federal Six-Wheelers

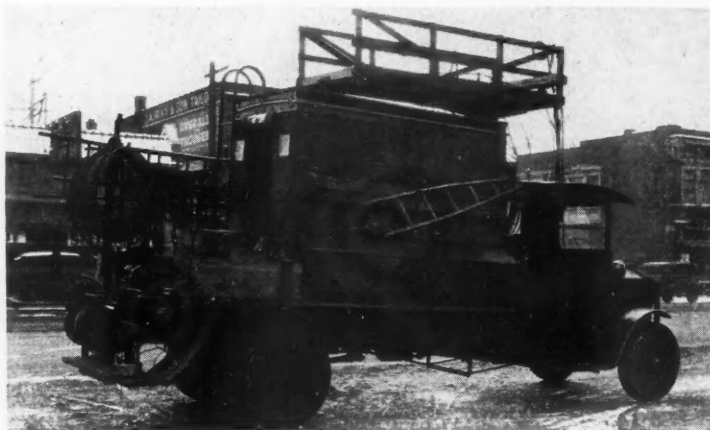
Model	U6SW	U6SWAB	4C6SW
Capacity	6-ton	6-ton	8-ton
Wheelbase	201 in.	201 in.	231 in.
Engine, make	Cont. R	Cont. R	Cont. R
size	6- $\frac{1}{8}$ x 4 $\frac{3}{4}$	6- $\frac{1}{8}$ x 4 $\frac{3}{4}$	6- $\frac{1}{8}$ x 4 $\frac{3}{4}$
Rear axle, make	Timken	Timken	Timken
model	SW200	SW200	SW300W
ratio	7 $\frac{1}{2}$ to 1	7 $\frac{1}{2}$ to 1	8 $\frac{1}{2}$ to 1
Brakes	6 wheel hydraulic	6-wheel air	6-wheel air
Tires, front	34 x 7	34 x 7	36 x 8
rear, dual	34 x 7	34 x 7	36 x 8
Max. balloon size	9.00/20	9.00/20	

For more detailed specifications see table starting on page 65.

SPECIAL BODIES MAKE

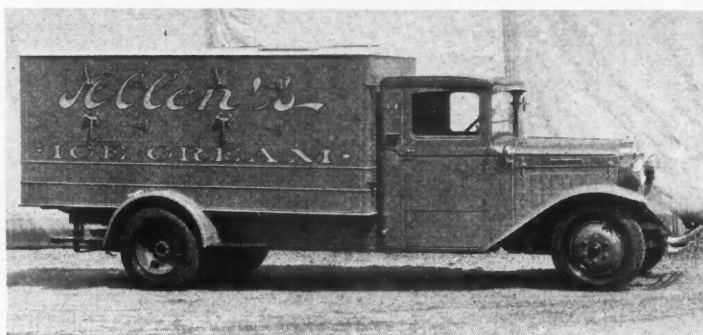
Municipal

Because of equipment such as this there is no excuse for a reluctant light in the City of Detroit (Fig. 1). The truck is a 2½-ton Model K Standard owned by the City of Detroit and equipped to take care of any lighting emergency as well as regular maintenance. The tower, made by the Wood Hydraulic Hoist & Body Co., is located between cab and body. The small box-like body serves as a storeroom for supplies. On each side are tool boxes and hooks supporting ladders and large implements. The rear end is virtually a work bench equipped with vise, lead heating pot, tools, etc.



Ice Cream

Gone are the days of the clumsy and unsightly ice cream delivery truck with its monstrous double type body spilling ice and brine as it shakes its way ponderously over pavement on solid tires. The ice cream delivery truck of today in contrast is clean and attractive (Fig. 2). The accompanying illustration is an example of a modern ice cream truck which covers a much larger territory at a lower cost than the older type and at the same time is effective as an advertising medium. The body is refrigerated by dry ice and is mounted on a Diamond T.



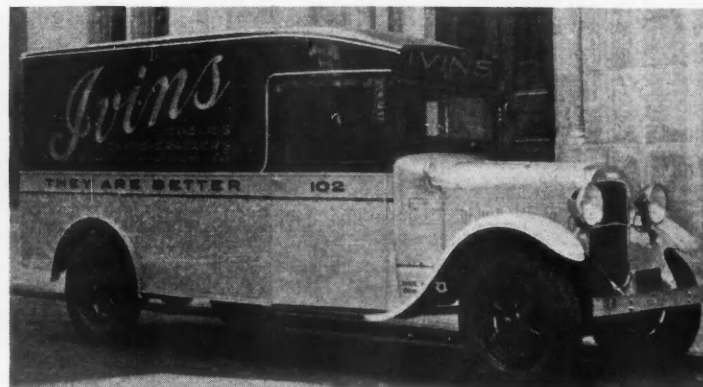
Van-Bus

Van men take notice! This Dr. Jekyll and Mr. Hyde van-bus idea as worked up by F. T. Shirlock, furniture mover of Torrington, Conn., makes possible a very economical service for suburban schools without the need of owning buses for four-hour-a-day use (Fig. 3). Mr. Shirlock, whose business requires eight trucks, has a contract with the Torrington High School for the daily transportation of its pupils. Operating as a school bus two hours in the morning and two in the afternoon, the Shirlock van-bus converts into a spacious van for six hours work each day. The body is mounted on an Autocar 2-ton chassis.



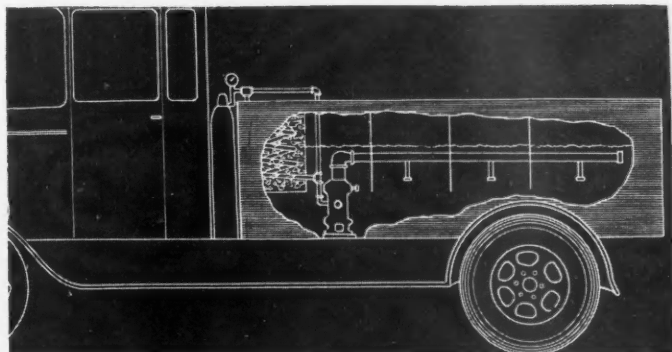
Baker

J. S. Ivins Sons, Inc., Philadelphia, believe in sending forth its famous line of crackers and cakes in limousine style and comfort, recognizing that quality of product is reflected by association (Fig. 4). The body is designed to attract attention by its spick-span appearance. Ivins' bodies are finished in rich cream, bright red and gold lettering. The body space was carefully calculated to accommodate certain size tubs in the most convenient way. The interior is fitted with folding racks and tie ropes to hold the merchandise in place. The chassis is a Federal.



TRUCK SCOPE BROADER

5

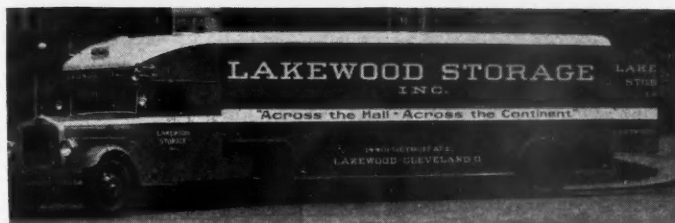


Live Fish

In the future live trout taken from Oregon hatcheries and destined to live in various state streams will ride to their new locations in a truck which has all the latest fixtures of piscatorial elegance (Fig. 5). This new "fish pullman," which saves the Oregon Game Commission about \$50 a day, is equipped with a 220-cu. ft. tank and a special oxygen aerator. The treated water permits the accommodation of twice the number of fish generally carried.

The aerator, designed by Ansel R. Clark, of Portland, Ore., is built into the tank and is operated entirely by oxygen pressure. Water is admitted to the device through a series of chambers and channels where it is subjected to a tornado of pure oxygen under pressure. The oxygen-impregnated water then moves through a horizontal pipe to the opposite end of the tank where it is discharged under the surface of the water.

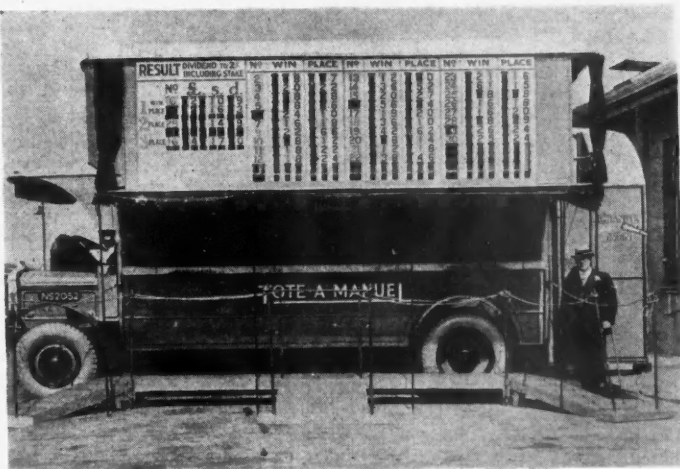
6



Furniture

When customers of the Lakewood Storage Company of Cleveland decide to move their worldly possessions, they do so in regal style (Fig. 6). A furniture van, gigantic and attractive, rolls quietly up to the vacating customer's door and the removal is performed quickly and efficiently. The unit consists of a White 51 tractor, a Highway trailer and Hoffman body. The body is 30 ft. long and 8 ft. wide, and contains 1600 cu. ft. of space, which is ample for carrying the entire furnishings of two six-room apartments, including pianos. Unlike the usual tractor-trailer truck, there is no gap between the cab and trailer but is close-fitting with a streamline effect from bumper to tail light because of the concave and convex construction of the cab and front end of the body.

7



Bookie

Excited English race-track habitués placing bets with the operators of this new portable betting office, known as the Totalisator, are not kept in the dark as to the odds their favorites are paying as in the days of the busy bookie or at tracks not equipped with a mechanical calculator (Fig. 7). A glance at the board keeps them constantly informed of the ever-changing odds as long as betting continues. Tickets are issued and totals can be seen from each side of the vehicle. The inventor, Fred Howard, is standing at the entrance of the gangway.

8



Dry Ice

Meat consumers of Detroit were impressed recently by new dry refrigeration motor equipment placed in operation by the Great Atlantic & Pacific Tea Co. (Fig. 8). This equipment, used in daily meat delivery, assures distribution of meat in good condition. The body, insulated with special Balsa panel and Kapoc, is 15 ft. long, 6 ft. high and 6 ft. wide, inside dimensions. The interior is equipped with removable shelving, and hooks for hanging beef. Dry ice reservoirs are also furnished. The body is made by Fitz-Gibbon & Crisp, and is mounted on an Autocar chassis.



NEW TRUCK SALES

Complete New Truck Registrations for June, 1930, and

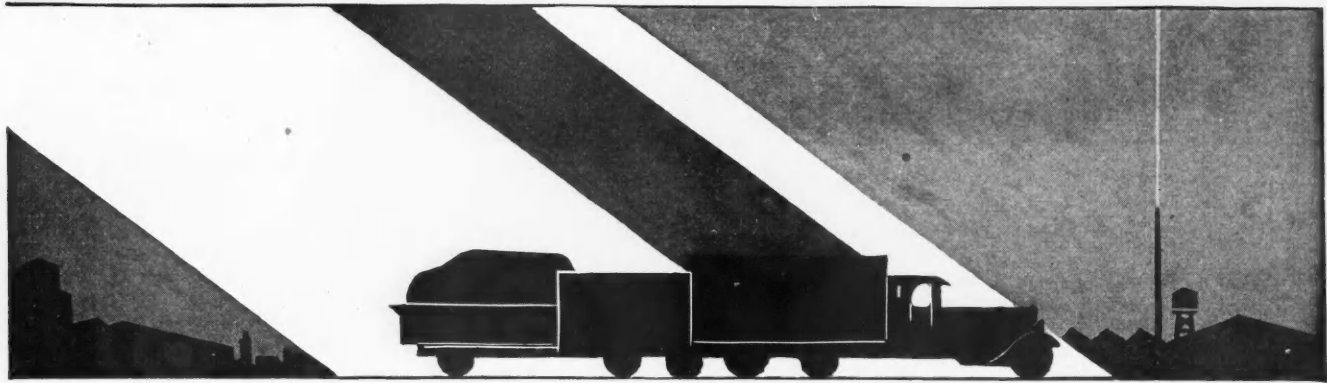
	Autocar	Brockway-Indiana	Chevrolet	Diamond T	Dodge	Fagool	Fargo	Federal	Ford	G. M. C.	Gottfredson	International	LaFrance-Republic	Mack	Moreland	Relay	Reo	Rugby	Schacht	Selden-Hahn	Sterling	Stewart	Studebaker	White	Willys-Overland	Total Sales by States Including Miscellaneous
ALA..... June 1930			121		5				195	5		3	2										2	11		344
6 mos. 1930	1		1,448	1	35				1,326	29		100	4				14					1	8	26	11	3,032
6 mos. 1929	3		1,125		83			5	1,071	43		150	16				20					1	15	12		2,560
ARIZ..... June 1930	1		38		8		1		100	3		7						1					12	2		164
6 mos. 1930			299		74				606	20		39	5				15					9	12	7		1,114
6 mos. 1929			441		150		7		764	72		95	4				28					3	30	9	15	1,639
ARK..... June 1930			81		1				70			9												3		164
6 mos. 1930	1		703		43		2		924	29		182					12						1	21	10	1,946
6 mos. 1929	6		997	3	117		3	7	1,542	40		267	5				41						4	30	20	3,100
CALIF..... June 1930	7		554	7	96	44	2	14	1,243	94		59	14	22	25		59	10			20	7	8	53	9	2,394
6 mos. 1930	53	1	2,722	18	668	210	28	83	7,457	377		321	51	170	224	1	430	45			110	30	68	189	62	13,587
6 mos. 1929	90	2	2,728	9	1,273		45	134	7,957	544	16	320	24	231	334	2	616	93			154	48	98	226	54	15,675
COLO..... June 1930	2		148	1	6		2		222	13		15					2							5	10	430
6 mos. 1930			859	1	123	1	22	3	1,434	95		164	1	3	2		47	9					4	29	75	2,905
6 mos. 1929	1		878		223		12	11	1,106	150	1	197	3	10	1		40	7					8	30	15	2,706
CONN..... June 1930	12	10	137	6	40		4	3	183	21		18					28					12	7	5	2	535
6 mos. 1930	36	37	739	50	236		23	34	1,298	102		155	3	129		5	138	1	6	1	9	59	21	35	35	3,249
6 mos. 1929	47	51	1,051	25	388		39	28	1,266	170		187	2	180		9	300	9	3	2	13	84	38	43	43	4,046
DEL..... June 1930			33		1				50	2		3					2									97
6 mos. 1930	25	17	227	1	13		1		326	36		33	1	9			18	1								725
6 mos. 1929	10	1	258		31		1		361	47		59	2	4			27	4								828
D. C..... June 1930	5	1	23	3	9				91	7		1					1				3					153
6 mos. 1930	20	7	145	12	47				419	41		15					15									779
6 mos. 1929	8	15	261	30	50			2	645	34		29					22	1			10	18		21	7	1,215
FLA..... June 1930			95		4				218	3		8					6									343
6 mos. 1930	1	26	1,033		67			4	1,780	35		94					41	3								3,166
6 mos. 1929	16	817		6	63		3	2	1,430	32		84	3				32									2,562
GA..... June 1930			120		10			1	157	10		6														311
6 mos. 1930	8	36	984		70		11		1,501	51		122					13	5								2,356
6 mos. 1929	5	36	1,503	1	128		3	8	1,581	27		90					20									3,513
IDAHO..... June 1930			81		5				97	2		20					2	2								215
6 mos. 1930			332		34				524	15		58					13	5								1,015
6 mos. 1929			338		60		1		335	23		69	1	15	10		24	11								917
ILL..... June 1930	2	2	441	58	46		2	4	598	28		112					17	3								1,382
6 mos. 1930	43	63	3,857	450	452		80	81	5,117	279	4	995	14	102		16	182	23								12,639
6 mos. 1929	52	89	4,091	631	918		73	87	5,969	456	42	1,363	20	206		38	329	33								15,411
IND..... June 1930			200	2	24		2	1	341	38		56					9									766
6 mos. 1930	1	179	2,270	44	236		27	15	3,138	234		471					29	118	6							7,054
6 mos. 1929	9	114	2,525	40	457		15	37	3,309	284		463	1	17			23	204	8							7,779
IOWA..... June 1930			299	2	33		5	4	356	18		100					21	1								877
6 mos. 1930			2,164	15	156		14	15	2,028	70		782	1				93	11								5,551
6 mos. 1929	1	25	2,722	9	286		39	14	1,811	85		787	3				164	18								6,120
KANSAS..... June 1930			344	2	25		7		295	15		49					10	3								776
6 mos. 1930			1,938		184		27	2	1,757	71		290					65	3								4,535
6 mos. 1929			1,733	15	316		19	4	1,748	140		464	5				83	3								4,675
KY..... June 1930	3	2	151	1	13			1	208	12		28	1	6			10									471
6 mos. 1930	4	26	1,024	6	99		13	5	1,306	83		226	5	15			45	4	20							3,004
6 mos. 1929	7	19	1,064	19	184		14	3	1,109	124		250	2	33			89	4	18							3,053
LA..... June 1930			138		10			1	186	5		16					2									364
6 mos. 1930			971		67		1	2	1,238	36		159					10									2,565
6 mos. 1929	3	19	991	13	122		4	5	1,581	68		232					16	1								3,117
ME..... June 1930	1		173		31				212	6		37					16									492
6 mos. 1930	5	22	1,029	7	134		10		1,246	26		124					68									2,754
6 mos. 1929	5	5	966	9	157		12	1	1,133	40		43					111	9								2,547
MD..... June 1930	8	14	112	5	12		2	3	237	17		30	1	27			5									506
6 mos. 1930	64	68	945	46	117		12	27	1,515	90		222	8	97			90	3								3,517
6 mos. 1929	61	23	976	47	227		7	29	1,384	122		189	11	129			122	3								3,544
MASS..... June 1930	31	29	237	11	68		8	15	710	58		79	6	36			43									1,411
6 mos. 1930	149	107	1,383	77	434		55	66	3,757	293		390	14	202			223	3	14							7,623
6 mos. 1929	148	109	1,963	66	725		100	83	3,975	440	1	433	69	270			208	8	4	10	100	50	31	162	70	9,469
MICH..... June 1930			288	14	27		2	6	896	49		57	9				14									1,412
6 mos. 1930	22	11	2,391	44	240		29	72	5,339	287	23	392	40	39			165	12	12							9,373
6 mos. 1929	37	24	4,274	45	616		96	124	6,990	497	18	641	8	77			480	22	2							14,385
MINN..... June 1930			238	23	22		3	2	376	7		69	1	2			7	1								781
6 mos. 1930			1,742	59	202		24	20	2,674	96		457	3	27			103	8								5,657
6 mos. 1929			1,771	9	211		7	32	2,566	120		456					138	8								5,484
MISS..... June 1930			229		6				276	5		17	1				2	1								555
6 mos. 1930			1,364	1	64				1,548	38		126	1	11			21	2								3,223
6 mos. 1929			950		47				985	20		124					22									2,169
MO..... June 1930			306	12	25		2	2	429	26		33	2	10			5									905
6 mos. 1930	21	74	3,476	104	365		27	64	4,142	214		590	9	43			109	14								9,746
6 mos. 1929	24	76	3,091	161	575		32	86	3,546	373																

BY MAKES AND STATES



Comparative Six-Month Totals for 1930 and 1929

		Autocar	Brockway-Indiana	Chevrolet	Diamond T	Dodge	Fageol	Fargo	Federal	Ford	G. M. C.	Goitrdson	International	LaFrance-Republic	Mack	Moreland	Relay	Reo	Rugby	Schacht	Selden-Hahn	Sterling	Stewart	Studebaker	White	Willys-Overland	Total Sales by States Including Miscellaneous
NEB.	June 1930	9	179	11	9	7	1	233	10	39	311	3	12	1	1	1	1	1	1	1	1	1	1	1	1	1	505
	6 mos. 1930	11	1,391	11	96	7	2	1,722	88	311	1,499	1	13	1	1	1	1	1	1	1	1	1	1	1	1	82	3,819
	6 mos. 1929	14	1,527	7	185	2	2	1,499	146	420	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	22	3,968
NEV.	June 1930	5	5	5	5	5	5	27	1	2	27	1	2	1	2	1	1	1	1	1	1	1	1	1	1	40	
	6 mos. 1930	47	47	37	37	37	37	154	12	13	154	1	13	1	1	1	1	1	1	1	1	1	1	1	1	279	
	6 mos. 1929	104	104	92	92	92	92	208	11	11	208	1	11	1	1	1	1	1	1	1	1	1	1	1	1	473	
N. H.	June 1930	5	84	12	9	9	9	138	2	1	138	2	1	2	1	1	1	1	1	1	1	1	1	1	1	269	
	6 mos. 1930	29	396	36	37	37	37	645	19	45	645	3	16	3	16	3	16	3	16	3	16	3	16	3	16	1,316	
	6 mos. 1929	2	20	469	4	86	4	617	40	32	617	10	13	10	13	10	13	10	13	10	13	10	13	10	13	1,391	
N. J.	June 1930	20	44	355	26	64	4	713	50	39	713	2	39	5	50	1	35	2	3	2	15	8	7	20	12	1,528	
	6 mos. 1930	88	195	2,042	101	468	34	3,982	258	219	3,982	7	248	33	366	15	339	26	13	12	54	37	65	169	113	8,676	
	6 mos. 1929	132	134	2,560	44	482	84	3,570	312	248	3,570	10	333	33	366	15	339	26	13	12	54	37	65	169	113	9,363	
N. M.	June 1930	3	50	1	1	1	1	62	2	3	62	2	3	1	1	1	1	1	1	1	1	1	1	1	1	127	
	6 mos. 1930	3	348	24	24	24	24	430	12	54	430	12	54	1	1	1	1	1	1	1	1	1	1	1	1	879	
	6 mos. 1929	3	340	62	62	62	62	304	27	54	304	12	54	1	1	1	1	1	1	1	1	1	1	1	1	832	
N. Y.	June 1930	18	192	521	34	131	13	1,144	84	145	1,144	2	1,061	5	71	4	64	7	3	9	22	65	7	54	19	2,669	
	6 mos. 1930	158	852	4,606	266	922	98	8,578	684	924	8,578	2	1,061	15	635	71	472	21	19	36	129	493	53	378	182	20,165	
	6 mos. 1929	310	887	6,142	326	1,640	270	8,679	729	924	8,679	2	1,061	15	635	71	472	21	19	36	129	493	53	378	182	24,178	
N. C.	June 1930	10	203	1	8	8	8	209	5	13	209	5	13	4	13	2	20	5	5	5	5	5	5	5	5	3	446
	6 mos. 1930	10	2	1,426	4	120	6	1,430	43	156	1,430	5	115	4	13	5	40	13	13	13	13	13	13	13	13	28	3,329
	6 mos. 1929	13	10	2,046	288	8	10	1,987	129	115	1,987	5	115	4	13	5	40	13	13	13	13	13	13	13	13	29	4,829
N. D.	June 1930	58	58	10	10	10	10	85	3	274	85	3	274	1	1	1	31	5	5	5	5	5	5	5	5	4	196
	6 mos. 1930	407	407	31	31	31	31	533	16	488	533	16	488	1	1	1	33	12	12	12	12	12	12	12	12	40	1,375
	6 mos. 1929	614	614	67	67	67	67	698	64	488	698	16	488	1	1	1	33	12	12	12	12	12	12	12	12	40	2,031
OHIO.	June 1930	26	9	346	2	59	10	780	67	92	780	67	92	16	16	6	40	2	24	24	18	18	18	18	18	31	1,624
	6 mos. 1930	87	109	2,810	29	399	48	5,135	364	660	5,135	1	660	14	98	23	245	22	105	71	21	79	25	267	258	11,092	
	6 mos. 1929	98	120	4,134	78	710	77	5,593	378	797	5,593	7	797	17	147	22	403	18	71	21	36	35	302	290	13,659		
OKLA.	June 1930	12	4	268	17	5	5	331	8	81	331	8	81	2	10	1	51	1	2	2	2	2	2	2	2	6	755
	6 mos. 1930	12	20	1,749	6	193	26	1,958	110	343	1,958	8	343	2	43	2	51	1	2	2	2	2	2	2	2	41	4,717
	6 mos. 1929	3	33	2,091	18	385	30	2,549	125	500	2,549	125	500	2	29	2	96	2	17	17	17	17	17	17	17	82	6,102
ORE.	June 1930	2	93	1	1	1	1	180	13	15	180	13	15	1	1	2	32	15	15	15	15	15	15	15	15	7	350
	6 mos. 1930	9	1	555	1	64	10	1,112	59	83	1,112	13	83	6	29	6	85	16	16	16	16	16	16	16	16	25	2,114
	6 mos. 1929	1	1	722	1	171	16	1,301	125	121	1,301	125	121	4	35	14	85	16	16	16	16	16	16	16	16	16	2,766
PA.	June 1930	34	45	556	22	123	11	1,119	78	149	1,119	1	149	5	85	20	67	3	8	25	58	34	32	53	53	2,613	
	6 mos. 1930	232	271	3,620	95	865	71	6,878	418	831	6,878	16	831	29	447	86	305	36	51	139	323	77	224	236	236	15,693	
	6 mos. 1929	243	242	4,397	131	1,307	160	7,325	554	818	7,325	27	818	61	450	77	650	45	6	159	178	74	317	224	224	17,882	
R. I.	June 1930	6	4	39	5	5	5	74	13	9	74	13	9	4	20	1	42	1	3	3	3	3	3	3	3	1	172
	6 mos. 1930	25	14	274	3	79	13	477	56	47	477	13	47	2	46	1	127	5	5	5	5	5	5	5	5	19	1,121
	6 mos. 1929	37	6	385	4	161	21	451	94	43	451	94	43	2	46	1	127	5	5	5	5	5	5	5	5	19	1,493
S. C.	June 1930	1	90	2	2	2	2	163	1	4	163	1	4	2	2	1	9	2	2	2	2	2	2	2	2	1	269
	6 mos. 1930	1	888	38	38	38	38	961	13	47	961	13	47	2	10	1	12	2	2	2	2	2	2	2	2	1	2,012
	6 mos. 1929	2	1,107	105	105	105	105	1,041	50	92	1,041	50	92	1	10	1	12	2	2	2	2	2	2	2	2	1	2,481
S. D.	June 1930	1	57	1	1	1	1	60	19	45	60	19	45	1	11	1	8	1	1	1	1	1	1	1	1	1	195
	6 mos. 1930	1	560	5	5	5	5	618	19	313	618	19	313	1	11	1	67	5	5	5	5	5	5	5	5	1	1,740
	6 mos. 1929	1	566	7	7	7	7	614	42	409	614	42	409	1	11	1	66	10	10	10	10	10	10	10	10	1	1,840
TENN.	June 1930	3	89	8	8	8	8	119	7	12	119	7	12	7	31	1	27	3	3	3	3	3	3	3	3	1	247
	6 mos. 1930	13	1,026	4	121	4	46	1,195	71	173	1,195	1	173	7	31	1	27	3	3	3	3	3	3	3	3	13	2,792
	6 mos. 1929	5	1,277	8	132	3	35	926	124	104	926	124	104	2	27	1	48	1	1	1	1	1	1	1	1	26	2,757
TEXAS.	June 1930	1	3	1,089	1	22	11	967	24	192	967	24	192	8	44	10	152	21	1	1	1	1	1	1	1	29	2,408
	6 mos. 1930	4	31	5,061	5	277	65	5,580	155	912	5,580	155	912	8	44	10	152	21	1	1	1	1	1	1	1	111	12,691
	6 mos. 1929	41	55	6,401	30	615	46	6,321	342	1,330	6,321	342	1,330	5	59	24	239	26	1	1	1	1	1	1	1	111	15,886
UTAH.	June 1930	72	10	2	2	2	2	136	5	9	136	5	9	2	2	2	2	2	2	2	2	2	2	2	2	1	245
	6 mos. 1930	354	40	8	8	8	8	697	15	63	697	15	63	2	2	2	28	8	8	8	8	8	8	8	8	7	1,244
	6 mos. 1929	347	93	5	5	5	5	666	14	68	666	14	68	2	2	2	27	10	10	10	10	10	10	10	10	6	1,296
VT.	June 1930	8	49	1	7	7	7	83	3	9	83	3	9	3	3	6	31	1	1	1	1	1	1	1	1	3	177
	6 mos. 1930	22	244	10	47	47	47	516	15	56	516	15	56	3	3	3	31	1	1	1	1	1	1	1	1	6	985
	6 mos. 1929	15	309	102	17	17	17	487	39	153	487	39	153	3	3	2	66	3	3	3	3	3	3	3	3	12	1,280
VA.	June 1930	1	2	296	1	18	1	322	13	216	322	13	216	30	27	6	58	4	1	1	1	1	1	1	1	13	727
	6 mos. 1930	18	54	2,364	3	162	7	2,293	103	209	2,293	103	209	30	27	6	78	10	1	1	1	1	1	1	1	64	5,56



TRUCK INDUSTRY NEWS

GENERAL

The White Co. has announced the new Model 613 six-cylinder school bus chassis incorporating several safety features. A double drop frame provides an extremely low center of gravity, and the braking system is composed of four-wheel hydraulic brakes, equipped with a vacuum booster. The wheelbase is 180 in. and the chassis is designed for 16 to 21-passenger body.

The Bureau of Agricultural Economics, Department of Agriculture, is working on a survey to determine the importance of motor truck receipts of fruit and vegetable supply in some of the country's leading market centers and to ascertain the volume of truck movement as compared with movement by rail and water from representative producing areas.

The price of Stewart's new 1½-ton Model 40 chassis is \$895 and not \$850 as published in error in the description appearing in the August issue.



ERNEST W. STEPHAN,
THE NEWLY APPOINTED
MANAGER OF
BRANCHES FOR REO

Aluminum alloy tanks for transportation of inflammable liquids by motor trucks are being tested by the National Fire Protection Committee on Flammable Liquids, the Aluminum Co. of America and the American Petroleum Institute Committee.

Opening of a tire repair school offering four weeks of free instruction to all repair men in its dealer organization is announced by the United States Rubber Co. The school, located in Detroit, is under the supervision of Charles Samson.

The Maryland Automobile Trade Assn., located in Baltimore, has organized a Truck Operators' Bureau composed of operators of large fleets of trucks to consider tax legislation, reciprocal relations and other subjects affecting the industry.

Included in the exhibit of the American Bottlers of Carbonated Beverages to be held Nov. 10 to 14 in Milwaukee in conjunction with that body's annual convention will be a display of truck equipment used by bottlers.

FACTORY

Brockway Motor Truck Corp. net earnings for the six months ended June 30 were \$212,335 after all charges.

A gain of 26.2 in truck sales for the first half of 1930 over the same period of 1929 is reported by the Four Wheel Drive Co. The company also reports that July and August bookings instead of being seasonally down are over those of last year.

Manufacturing rights of the Weber Trailer Coupling Hook have been obtained from the Weber Trailer & Mfg. Co., Los Angeles, by the Sterling Motor Truck Co., which company will distribute it east of the Rocky Mountain region.

The Budd Wheel Co. has produced 4,107,630 wheel units during the first six months of 1930, which compares with 4,515,705 units produced during the same period of 1929, according to H. A. Coward, secretary of the company.

Thermoid Rubber Co. reports net profit for six months ended June 30 of \$283,294. This compares with \$464,850 for the same period last year.



OSCAR C. KREIS, WHO
IS NOW CONSULTING
ENGINEER FOR
STUDEBAKER CORP.

Stockholders of the Federal-Mogul Corp. have voted to increase the capitalization of the corporation to provide for expansion through acquisition of the Watkins Mfg. Co. and similar units.

McQuay-Norris Mfg. Co. for six months ended June 30 report net income of \$300,040 after all charges, which compares with \$456,000 in the corresponding 1929 period.

Mack Trucks, Inc., reports net profit for quarter ended June 30 of \$1,409,924, which compares with \$490,709 in the first quarter and \$2,481,541 in the June quarter of 1929.

Goodyear Tire & Rubber Co. reports net profit for the six months ended June 30 of \$5,592,309 after all charges. This compares with \$12,633,865 for the first half of 1929.

Federal Motor Truck Co. has reported for six months ended June 30 net profit of \$191,458, which compares with profit of \$315,771 for the same period last year.

The White Motor Co. reports net earnings for six months ended June 30 of \$1,048,000, which compares with \$1,404,000 for the same period last year.

Bendix Aviation Corp. reports earnings for quarter ended June 30 of \$779,255 after all charges.

PERSONAL

A. C. Pearson, chairman of the board of the United Business Publishers, Inc., owner of **COMMERCIAL CAR JOURNAL & OPERATION AND MAINTENANCE**, has been decorated with the Legion of Honor by the French Government. Mr. Pearson was one of the few civilians to receive the certificate of service of the Council of National Defense without being in the service of the United States during the war.

R. P. Page, Jr., president of the Autocar Co., and Walter S. Graves, sales director of the Dodge Bros. truck division, have been appointed to the Motor Truck Committee of the National Automobile Chamber of Commerce.

Edw. S. Otton resigned as head of the Trade Sales Division of the Moto-Meter Gauge & Equipment Corp. to join Hurley-Townsend Corp. of New York as sales and advertising manager.

Henry Kennedy has been appointed regional manager for the Reo Motor Car Co. in the midwestern region.

A. C. PEARSON IS HONORED AND DECORATED BY FRANCE



Walter Emerson Frank Radtke has been appointed Pacific Coast sales representative of the Hercules Motor Corp. of Canton, Ohio, with headquarters in the Russ Building, San Francisco.

At the recent meeting of the board of directors of the Ohmer Fare Register Co., Robert C. Lee of Cleveland was elected a director to fill a vacancy on the board.

Arthur G. Underwood has been advanced from the position of manager of accessory sales to that of assistant sales manager of A. Schrader's Sons, Inc.

H. H. Hageman has been appointed manager of the northwestern branch of the Firestone Tire & Rubber Co. with headquarters in Minneapolis, Minn.

L. DeLigouri has been appointed regional manager for the northwest region of the Reo Motor Car Co.

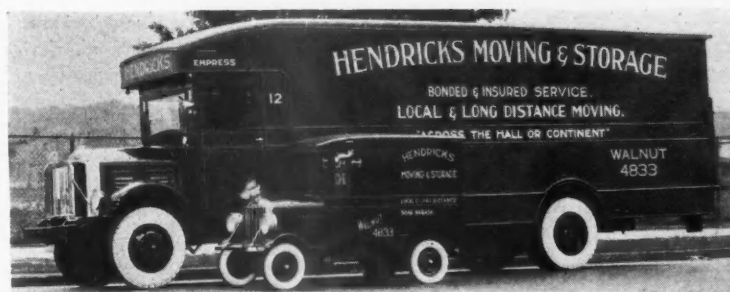
Jere E. Dodge, formerly branch manager of Reo at Atlanta, has been advanced to the office of regional manager for the South Atlantic region.

Carl G. Anderson has joined the Sterling Motor Truck Co., Milwaukee, in the capacity of regional sales director.

D. P. Brother has been advanced to the office of director of advertising of General Motors Corp.

"Herb" Shaughnessy has been appointed to the office of sales manager for the Trainor National Spring Co.

HENDRICKS GETS PUBLICITY BY COMPARISON. CONTRAST GIVES THE FISHER-STANDARD VAN GI-GANTIC DIMENSIONS



TRUCK INDUSTRY NEWS

Commercial Car Specifications on Page 65

TIRES NEED NURSING FOR MILEAGE HEALTH

CONTINUED FROM PAGE 20

split rims should line up and close within certain definite limits. The standard established by the National Rim and Wheel Association is alignment within 1/64 in. and close within 1/16 in.

Of the penalties of under-inflation the rim bruise is probably the most insidious. It is caused by the tire hitting an obstacle in the roadway with sufficient force to drive the tire up against the rim. The tread and sidewall rubber being very tough seldom show where the tire came in contact with the object. A tire injured in this way rarely fails at once. It may run for many miles and then go suddenly flat on a smooth roadway or while the truck is standing still. The reason is that the break is generally small at first but the flexing of the tire enlarges it until the tube works into the break and is pinched. If the tire strikes an object at an angle the result may be an outside break, appearing just above the rim flange. In such cases the break can be spot repaired and the danger avoided. The best way to avoid rim bruises, however, is to keep the tire properly inflated.

• Tread Wounds •
CASINGS should always be examined for tread cuts and when discovered repaired immediately. Such cuts while not causing a flat, allow moisture and dirt to get to the breaker strip. The flexing action of the tire enlarges the cut and the foreign matter tends to loosen the fabric from the tread, weakening and rotting the carcass and eventually causing blowouts. The remedy is an inexpensive spot repair, which is simply a sealing of the incision with rubber. Neglected tread cuts frequently reveal themselves in the form of the well-known "sand blister."

Blow-patches or removable boots should only be used for an emergency until such time as a permanent repair can be made. Failure to replace a boot with a repair is a wanton waste of money because the patches quickly chafe the inside of a tire beyond repair. The remedy is a first-class sectional vulcanizing job as soon as possible.

Daily inspections should also include a careful search for small objects such as pins, tacks, glass, small stones and pieces of steel, etc., that imbed themselves in the tread and

work themselves to the carcass until removed. They may eventually puncture or cause slow leaks.

• Wheel Infirmities •
A WHEEL out of line exacts a heavy toll from the tire. Wear is rapid, sometimes ruining a tire in a few hundred miles. Such a wheel does not run true and drags and side slips a tire over the road, scuffing away the tread. The effect is the same as rubbing the tread with a file. Misalignment may be due to improper toe-in, toe-out, or camber, a bent axle or steering knuckle, or a loose bearing. Too much camber is quickly detected by excessive wear on one side of the tire. Whatever the defect of misalignment, it should be promptly determined and corrected. Wobbly wheels are just as injurious to the tire, causing it to wear flat in spots. Wobble may be caused by uneven application of the rim to the wheel or to the wheel itself not being true.

A dragging brake, in addition to increasing brake expense, which in itself is an item of sufficient importance from the standpoint of safety and expense to demand attention, causes one tire to work more and wear faster than the other. Besides causing the tire to wear away in spots both bead and carcass are caused to deteriorate because of the heat generated in the brake and passed on to the tires through wheels and rim. Brakes should be equalized by specialists in that work.

In addition to the aforementioned there are other factors that contribute to long tire life. Clean garage floors keep the tires healthy. Floors covered with oil and grease attack the rubber, deteriorating it. It is also generally recommended that tires only worn to the cords and showing no serious defects of abuse can be economically reconditioned by applying new tread rubber.

• Professional Clinics •
EXPERIENCE has shown that unless an operator is large and can keep personnel and equipment busy, service can be obtained more economically and efficiently from a tire service station (or truck dealers set up to furnish such service). This is particularly true of operators of 10 units and under. To service his own

equipment would entail the investment in inflation equipment, although this particular item is always desirable no matter how small the fleet, tire changing apparatus, tools, repair equipment, etc., with attendant interest, depreciation, maintenance and operating charges, plus the expense of trained service men.

Tire service stations are set up to provide this service—they have the equipment, expert personnel and are able to distribute operating charges over a larger area. These advantages can be taken over with profit by the operator. As a matter of fact tire service stations are anxious to perform this service because it means a satisfied customer with good prospects of repeat business, upholding of good name of product and service sales. The latter reason, however, is not true in all cases, because some dealers provide for servicing cost in the initial tire charge.

Companies providing service of this character generally operate along similar lines, varying mostly in frequency of inspections, method of contacting customer, following up, etc., and time of inspections.

The following plan of a tire dealer, located in a large Eastern city, and who has met with commendable success, is particularly interesting.

• Night Nursing •
THIS dealer has equipped two trucks with complete tire servicing equipment, virtually service stations on wheels. Operating on a strict itinerary these trucks contact every customer on the list once a week. Furnished with garage keys by customers, an expert tire man and helper work through the night checking pressures and examining and correcting tires. A Weekly Inspection and Service Report is made out in duplicate at each stop, which provides tire information on each truck examined. It shows what the inflation pressure of each tire was and what was put in, what valve replacements were made (caps, insides and nuts), condition of alignment and a place for remarks covering tires needing repairs, recaps, rim inspection and other unusual conditions.

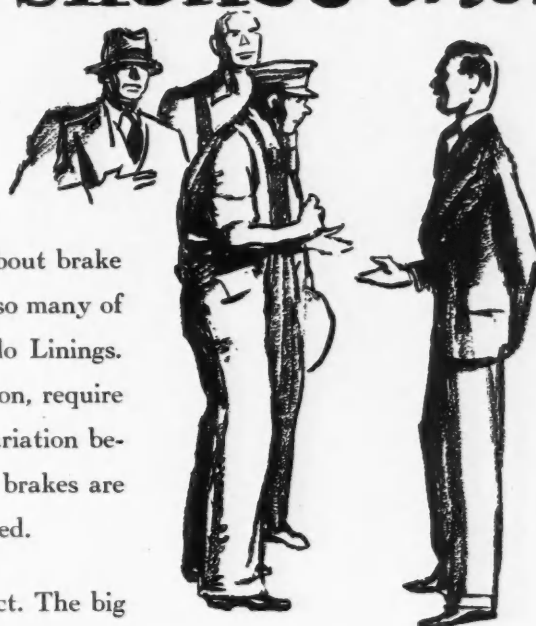
These reports are filed for reference and are used to show the owner what repairs are needed, how his tires are used by his drivers and how his tires are performing generally.

Examples of what regular tire service accomplishes are many, of which the following are a few:

The Washington Railway & Electric Co. in 1926 was operating 55 buses. Today this company operates 115. In May, 1926, the company com-

TURN TO PAGE 52, PLEASE

complaints - complaints - *how would you like to silence them?*



Do you have complaints from your drivers about brake linings? Most fleet operators do. That is why so many of the biggest companies have turned to Ferodo Linings. Drivers find that the brakes need less attention, require fewer adjustments, and are less subject to variation because of moisture, oil or heat—in short that brakes are more dependable when Ferodo Linings are used.

This is not just an empty claim. It is a fact. The big fleet operating companies will confirm it, for they are users of Ferodo Linings and know Ferodo's advantages from actual experience.

Ferodo Linings cost a little more per foot, but their superior service is worth a much bigger premium. That many people share this view is proved by the fact that Ferodo's is the fastest growing brake lining business in America today. Let us tell you more about it.



E-9-30

FERODO AND ASBESTOS INCORPORATED

Manufacturers of Ferodo Bonded Asbestos Brake Lining in rolls, Ferodo Pat. Die-Pressed Brake Segments, Ferodo M-R Lining and Ferodo M-R Brake Blocks.

Factory and General Offices: New Brunswick, New Jersey

MONEY SUNK IN ALTERATIONS

CONTINUED FROM PAGE 17

be recovered. Get this point straight from the field of value: you are making a mongrel out of your job when you indulge in alterations to any great extent.

Alteration should be called "Cash Depreciation." In many cases it is that, with the chances of resale favoring the unaltered original.

Alteration is down for the count, but counting up points I really find two scores that can be chalked up to the credit of alteration:

One where extra spring leaves permitted a heavier load with safety and thus gave immediate returns in tonnage hauled.

Two, where oversize rubber was installed and gave double mileage.

The safe alteration rule to prevent loss is shown in both scores which favor alteration. *Make sure of a double return on all expenditures involved.* Profit begins after twice the cost of alteration is secured. Haven't I made it plain how you give away or lose track of the first cost in the market? And what trucker has not heard the familiar words: "Too bad he spent the dough that way; he'll never come out on it." This expression is prompted, of course, by the feeling that no increase in market value is accomplished.

● Factory Alteration ●

THE production line rolls forward, and each new truck passing a certain point is given a serial number. At this very moment its existence is established. This is the birth certificate. The identification of all the parts in the car are connected to this number. To doubly identify it the engine number accompanies it. When factory alteration of the car is decided upon it is announced that beginning with a certain number such and such change becomes standard. This kind of alteration costs the buyer little or nothing at all, and sometimes the same car is offered after an alteration of considerable outlay, for even less money. As for example, trucks one year without starting and lighting sold the following year fully so equipped at no increase in price. Here is the point: Alteration before the chassis receives its birth certificate (the serial number) is not counted against it, and hence not a burden to the buyer.

For the past four years especially

has this been true. Bumpers, tire-carriers, windshield wipers, oil filters, cabs, starting and lighting outfits, along with optional ratio for gears in transmissions and differential, are among the host of alterations made at the factory besides a general trend toward better material throughout. But get one of these jobs that came off the line without something you think should be on it and then try to get it. I'll say you'll pay for it.

There should be no doubt in your mind today as to where the proper place is for alteration. Facts on record show that alteration during the years from 1912 to 1925 in the field in many cases was very satisfactory. Remodeled and rebuilt jobs during those years by the hundred were turned out which show a good return on the money invested. But the present is something else again.

The conclusion of the matter for alteration is or seem just this: The shelves of books showing designs and construction prior to 1926 fade and become of little value with the onrush of advancement since this date. Pages and pages of engine alterations become not worth the mention. Therefore, Mr. Owner-Operator, compel the truck salesman who takes your order for a truck to honestly help you get one that fits the job you have for it. Write it off in the shortest possible period, and thus entrench yourself for further advancement by being ready to keep pace with progress as often as circumstances demand it. If, on the other hand, you discover a mistake has been made and find yourself the owner of a misfit, don't sink money into expensive alterations. You'll find it more to your advantage in this day to refinance the account, take the best deal and start again. Sounds tough but certainly much better than having two trucks tied up in one and that one an old one.

What Holds the Rear Axle On?

CONTINUED FROM PAGE 40

directions and so keep the wheels on without depending upon the axle shafts.

With this type of wheel mounting there are two ways of connecting the axle shaft to the wheels. In one a toothed clutch, composed of a plate fixed to the shaft, that looks like a

gear because it has a set of false teeth fitting into grooves in the inside of the wheel hub, is used. In the other design a flange is formed on the end of the axle shaft, or is attached to the end of the axle shaft in some manner and this flange is bolted to the wheel hub. The Society of Automotive Engineers' definition of a full-floating axles states that the axle shaft is relieved from all strains except torsion, which is the driving stress. On a full-floating type axle the wheels will stay on and the vehicle can be towed even though both axle shafts are broken. Now in the four-wheel drive trucks, and with six wheelers"

But at this point Mac interrupts us. "Sorry, Den," he says, "I know you'd like to keep on talking about this all night, but I've got to start for home. Otherwise, I might become full-floating before I want to."

With a sigh of relief we rose to bow the gentleman out of our editorial sanctum (one desk, two chairs—and five waste baskets). "Sure am glad that you have found out everything you wanted to know about trucks, now, Mac," we conclude.

But in our hearts we knew he had hardly started yet, and that it wouldn't be many days before he'd be back again asking questions about something else.

He was.

(Drop in on the d'scuss'on next month)

Tires Need Nursing for Mileage Health

CONTINUED FROM PAGE 50

pleted an arrangement whereby its tires would be regularly and thoroughly serviced. The resulting tire performance down to 1929 is interesting. During the period the number of road delays have decreased as follows: 254, 106, 54, 27; number of minutes delay: 4470, 1987, 1067, 610; while mileages have increased from 1,852,318 in 1926 to 3,254,591 in 1929. These figures tell the story of savings without further discussion.

A driver of the Atlas Storage Co., Philadelphia, took great pride in the condition of his vehicle and made it a point to include tires in his regular inspections. He checked air-pressures and tire condition religiously. His labors saved his company about \$1,000 in one year.

Another Philadelphia company spent \$40 for small repairs during the life of a set of 34 x 7-in. tires on a 2½-ton truck used in long distance van service and succeeded in getting from 26,000 to 36,000 miles from each tire before it was discarded.



Your own cost records will tell you!

Write into those records of costs per ton-mile all those variable items of man efficiency and labor turnover—and then notice how emphatically your records focus attention on *brakes*.

Industry calls for greater and still greater load capacities, and for ever higher speeds. Distribution is in a hurry!—and the “governor” is *Braking Equipment*.

Just as steadily growing is commercial transportation's preference for Lockheed Hydraulic Brakes; conserving man-power and man-power's efficiency by smooth dependability; by the mental security they so unfailingly provide; by the added safety factor they bring to higher speeds.

Lockheed Hydraulics are doing their vital bit in keeping ton-mile costs *down*.

HYDRAULIC BRAKE COMPANY
DETROIT, MICHIGAN, U. S. A.
(Division of Bendix Aviation Corporation)

LOCKHEED HYDRAULIC Four BRAKES *Wheel*

SHOP SPECTATORS— PEST OR PLEASURE

CONTINUED FROM PAGE 15

tough, but it ain't got nothin' on bein' a mechanic."

"There's certainly nothing pleasant about being watched while working," I consoled him, "and it does seem to me that something ought to be done about it. Maybe nothing can be done, but at least I'm going to do a little investigating and maybe I'll come up with a good yarn for *COMMERCIAL CAR JOURNAL*. So long. See you fellows in church some time—I hope."

The investigation got under way immediately and the experience and views of a score of trade executives in a dozen states were solicited and received. Analyzing the views it was found that mechanics had a well-founded complaint but that various circumstances compelled some dealers to disregard the feelings of their employees and consider only those of their customers. Other dealers, it was found, adhere to a no-admittance policy with well-guarded exceptions, while still others, admitting that customers should be kept out of the service shop, raised a lot of "buts" that certainly must be taken into consideration before deciding upon a policy. Fortunately, some of the men even had ideas about how to keep the shop clear of spectators.

So that, all in all, the investigation proved the subject "Should the customer be kept out of the service shop? If so, how?" was a good one for editorial treatment because it constituted a problem in solving which the trade was divided into different camps. A clarification of issues, therefore, is in order. Let us first take up the conscientious objectors to customer exclusion.

● Shop Isolation ●

IN Chicago, where I had as high as 150 trucks under my direction constantly, I had a workshop on the second floor, and I kept the public out of there rigidly," said L. D. Hemmon, of L. D. Hemmon Motors (G.M.C.), Phoenix, Ariz., in prefacing his views. "The service shop in a large city should be provided with a central booth in the drive-in room where the order sheet may be made out immediately. Then some barrier should be erected through which the public may not pass after the truck has been taken beyond it. Preferably, I should say, on a separate floor. Here in Phoenix, a city of less than 100,000,

I find conditions very different. We are located in the middle of a block, and if a man walks through the salesroom and the shop to get to the alley without going around the block, he's welcome to do it. Perhaps as many as a half dozen may do it in the course of a day. Customers go into the shop at will. It's partly the spirit of the place and partly the size of the town, but I would consider it bad business to make any effort to change this. In fact, mechanics often make good contacts with drivers."

● Theory and Practice ●

THEORETICALLY, the customer ought to be kept out of the shop," observed E. F. Nygaard, manager of the truck department of the J. M. Oppen Co., Omaha, Neb. "In practice, no. And we don't try to keep him out. It is his truck and he has a right to be with it if he wishes. We work on the hourly basis, and if the customer sees the work being done it seems to lessen any objection to the bill presented later. If he sees two men busy at the job that lasts an hour, it is not hard to convince him that there were two hours of labor, whereas if he were barred from the shop he could have no clear conception of what was going on. The open shop for the customer inspires him with confidence in the workmen, the equipment, and the quality of the job."

In expressing his view, H. L. Smoots, sales manager of the Federal Truck Sales Co., Birmingham, Ala., said the average commercial car owner knows more and can be trusted not to allow the shop work to worry him. Sometimes his knowledge of his individual vehicle is even a great help. Therefore it is not necessary to keep him out of the shop.

"It hurts business to keep them out," was the practical observation of A. W. Marksheffel, president, Marksheffel Motor Co. (Dodge), Colorado Springs, Colo. "We find that if we have mechanics who know their work they don't get nervous when someone is watching them."

"We go over our entire territory regularly," said Otto Budke, service manager, White Truck Sales Co. of Arizona, of Phoenix, "making personal calls in search of service business. It is a big factor in our sales total. If we can increase either the service or the business by having a customer

walk in here and browse around, it's easier than to have to travel the length of the Apache Trail to meet him. The barriers we have about in our plant are meant not so much to keep the customer out, as to keep the attendants in. The workshop is shut off by a light wire netting, but the big doorways have no doors on them. The hint is sufficient."

Frank B. Smith, president, F. B. Chevrolet Co., and W. O. Strausbaugh, president, Strausbaugh Motor Co. (Dodge), both of Youngstown, Ohio, reached the unanimous conclusion that one of the best ways of getting and holding service business is to take the customer into the shop. Both feel that their chief competitor is the little alley shop which has few tools and has to take so much longer at a given job that his ultimate charge is higher than that of the well-equipped shop.

"See how we do it" is the slogan of our service department," Mr. Smith declared, and Chevrolet car and truck drivers and owners are invited in order that they may be impressed with the facilities provided.

● Obstacle Method ●

THERE seemed to be decided agreement among those favoring exclusion of customers from the shop that this can best be accomplished by setting the service department apart from the rest of the business. Not in another part of the city, but on the second floor, or third floor, for instance, or even on the first floor but so separated by partitions and entrances that it cannot be seen by customers on entering. Those subscribing to this remedy were George F. Wroten, of Wroten-Hundley Motor Co. (Dodge), San Antonio, Tex.; R. W. Leach, vice-president, Curtis Auto Co. (Reo), Milwaukee, Wis.; J. T. Jenkins, truck department manager, J. B. French Co. (Dodge), Oakland, Calif.; S. A. Stephens, president, S. A. Stephens, Inc. (Dodge), Buffalo, N. Y.; M. H. Clark, general manager, Milam Chevrolet Co., San Antonio, Tex., and R. E. Davis, general manager, O'Brien-Davis Auto Co. (Dodge), Omaha, Neb.

"In my opinion," Mr. Wroten also said, "an owner should never be permitted to go into the service department where his trucks are being repaired unless he has expressed a desire to visit the service department. If he makes such a request, no doubt he has some specific reason, and then you will be doing him a courtesy in permitting him to enter. Trucks for repairs should be received in a court of some character. The work to be done should be ascertained by an experienced man who should also be a

TURN TO PAGE 60, PLEASE

The Most POWERFUL TRUCK at this LOW PRICE ›

\$695

EXCESS power in the engine is matched by surplus strength in every chassis part. Studebaker trucks are built to be worth of the Studebaker name, and of 78 years of quality traditions behind that name!

1½ TON TRUCK CHASSIS FEATURES

Wheelbase 130" and 160"
70 horsepower 6 cylinder engine
4-speed transmission • 4-wheel brakes
5 sturdy cross members (7 on 160")
Heavy duty truck tires
Steel disc wheels*
Gasoline fuel pump
Timken axles
Special truck springs
Ross cam and lever steering
Foot button light control

1½ TON, 130" CHASSIS \$695; 160" CHASSIS \$775

Prices at the factory—bumpers and spare tire extra

2 TON TRUCK CHASSIS FEATURES

Wheelbase 148" and 160"
70 horsepower 6 cylinder engine
Double plate clutch
4-speed transmission • 4-wheel brakes
6 sturdy cross members (7 on 160")
Heavy duty truck balloon tires
Steel spoke wheels (dual rear), standard
Timken full floating rear axle
Special Studebaker truck springs
Ross cam and lever steering
Foot button light control

2 TON, 148" CHASSIS \$895; 160" CHASSIS \$945

S. P. A. TRUCK CORPORATION - - SOUTH BEND, INDIANA

6 CYLINDERS

70

HORSE POWER



*Dual rear wheels and auxiliary springs optional at extra cost on 1½ ton chassis. Dual rear wheels standard on 2-ton chassis; auxiliary springs optional at extra cost. Cabs and all standard bodies available with both 1½ and 2-ton chassis including panel, screen, express, stake, canopy, grain, cattle bodies.

STUDEBAKER Trucks



**"... and this device will
keep your new car new"**

Into the motor car and truck of today is built a precision and dependability gained thru years of ceaseless endeavor in automotive design and construction... From it emerges new brilliancy of performance! VISCO-METER pledges to protect and prolong this performance.

A Scientific Basis for Lubrication

Visco-Meter is entirely new to motordom, yet upon the function of this important device depends the life of any motor. Rightly called "the watchdog of lubrication", Visco-Meter analyzes the motor oil under actual operating conditions and reveals its exact lubricating value (viscosity) for

every minute of every mile.

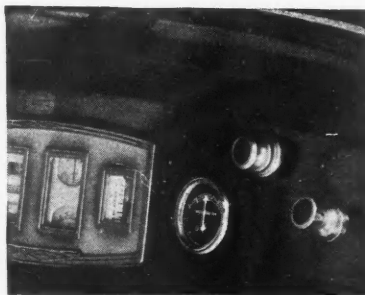
Guesswork ends! Instead of attempting to check oil by mileage readings, the driver has merely to



glance at the dial on the instrument board to know at once the lubricating quality of oil being supplied to bearings and cylinder walls. A lubricant which is too thin or of incorrect grade is instantly revealed... Visco-Meter also warns instantaneously of all lubrication disorders: clogged lines, leaks, faulty oil pumps, low pressures, insufficient oil.

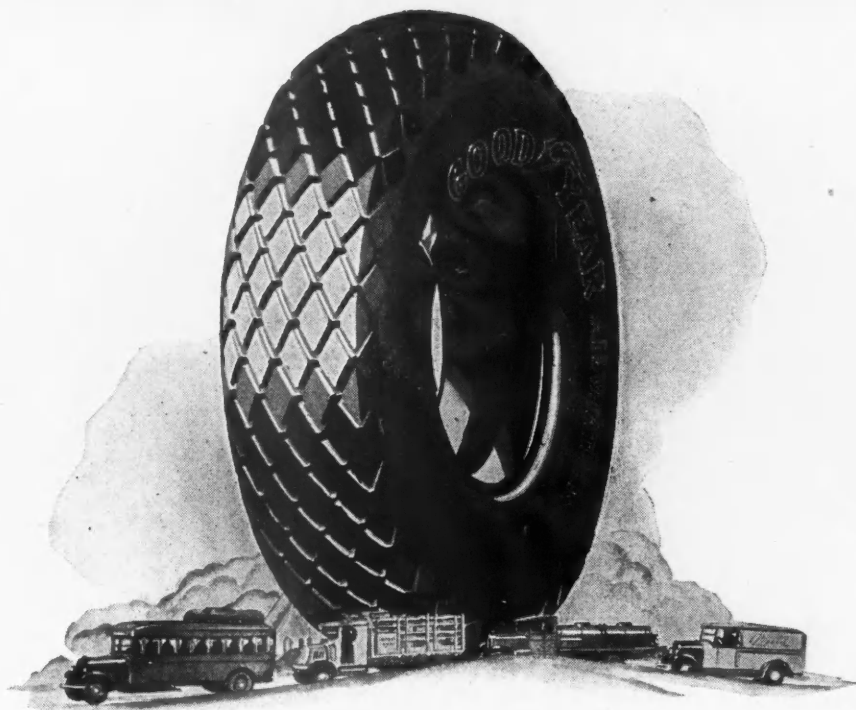
Pays for Itself in Oil it Saves

Visco-Meter enables each driver to get maximum mileage *safely* out of every quart of oil! This new device is substantially built and never needs servicing. Completely illustrated directions make installation easy. Dial can be attached to dash or to steering column. Send coupon for full details. Visco-Meter Corporation, 316 Grote St., Buffalo, N.Y.



.....
VISCO-METER CORPORATION
316 Grote Street, Buffalo, N.Y.
Gentlemen: Please send me complete information
on the Visco-Meter.
Name _____
Address _____

The VISCOMETER
Takes the Guesswork out of Motor Lubrication



DON'T PASS UP

the greatest trucking help of the year!

It was a big event for truck owners when Goodyear developed truck balloons.

Now that trucks are built for speed, these newest Goodyear Tires deliver all the advantages to trucks which balloon tires brought to passenger cars.

Because they absorb jolts, they protect the truck mechanism—reduce vibration—bring down maintenance and repair costs. They protect the load

from jars—they enable trucks to cover more miles per day, make more deliveries per day, because they travel faster, hold the road on curves, and provide greater traction on or off the pavement.

And beyond all that, these new Goodyear Truck Balloons make the tire cost per mile lower than it has ever been under similar operating conditions. They stand up under the heat of fast driving—they

make punctures even scarcer than they have been before—they roll softly over bumps that would break down many a high pressure tire.

When you get balloon tires for your trucks, get Goodyears. Goodyear pioneered and perfected truck balloon tires—and Goodyear Truck Tire Service Station Dealers have the advantage of the greatest balloon truck tire experience in the tire industry.

On your new trucks, specify Goodyears

GOODYEAR

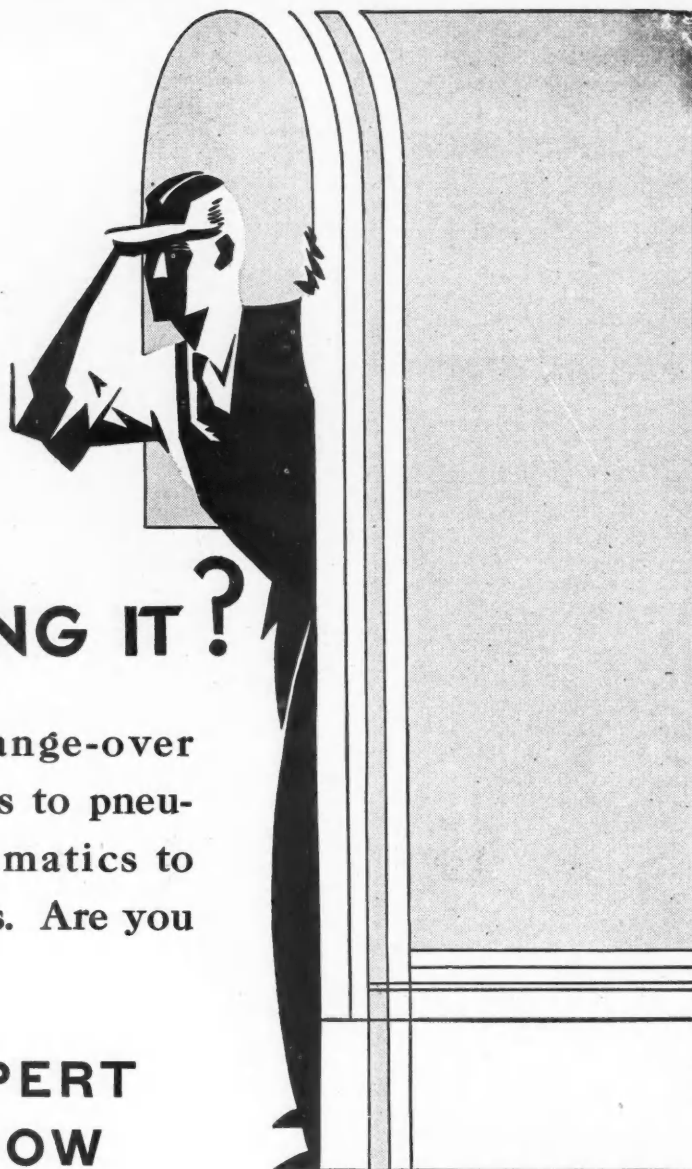
MORE TONS ARE HAULED ON GOODYEAR TIRES THAN ON ANY OTHER KIND

ARE YOU GETTING IT?

There's still a lot of change-over business going on. Solids to pneumatics—small sized pneumatics to oversize, heavy duty types. Are you getting your share of it?

LET OUR EXPERT SHOW YOU HOW

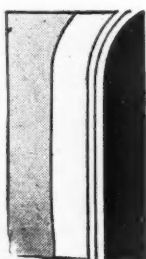
Handy to you is an Authorized Distributor member of the National Wheel and Rim Association. He's an expert at change-over jobs. He's fully equipped—with wheels, rims and parts—to help you handle change-overs. Call on him every time you have a change-over proposition—he'll service the job and show YOU a pretty profit.



SERVICE EVERYWHERE



Write today for name of your nearest Authorized National Wheel and Rim Distributor. His Emblem is your guarantee of genuine parts and expert service.



NATIONAL WHEEL & RIM ASSOCIATION

63 EAST LAKE STREET, CHICAGO, ILLINOIS

A National Organization of Authorized Factory Distributors for

Budd Wheel Co.

Cleveland Welding Co.

Dayton Steel Foundry Co.

Firestone Steel Products Co.

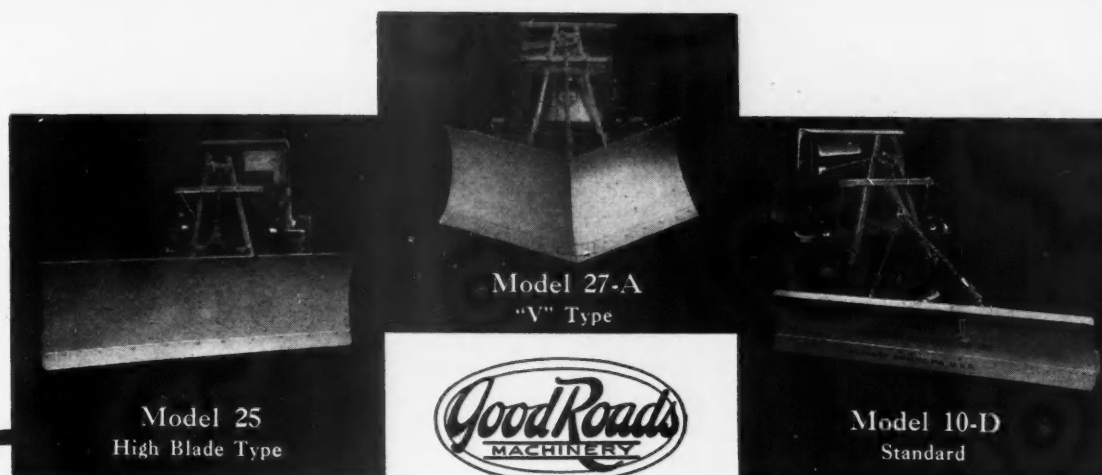
The Goodyear Tire & Rubber Co. (Rim Division)

Kelsey-Hayes Wheel Corp.

Motor Wheel Corp.

September, 1930

*The Commercial Car Journal
and Operation & Maintenance*



Champions

OVER SNOW-COVERED
ROADS SINCE 1913

Champion Snow Plows are the oldest and most complete line of snow removal equipment, for motor truck attachment. Widely used by state, county, city and town highway departments, railroads, industrial, and transportation companies, they offer truck dealers an unusual opportunity for winter business.



These same customers are winter truck buyers. Your aggressive sales effort may place you in a position to recommend "Good Roads" Equipment. A line of snow plows for every snow-removal condition. Plows that fit small as well as heavy duty trucks. Plows with every modern engineering improvement. Plows that operate with less effort, more economically. There's an extra profit for the truck dealer who helps sell "Good Roads" Equipment. Write for selling arrangement.

UNIVERSALLY ATTACHABLE
TO ALL STANDARD TRUCKS

Branches at:

Watertown, Mass.....36 Pleasant St.	Pittsburgh, Pa.....1941 Oliver Bldg.
Portland, Ore.....3rd and Hawthorne Sts.	New York, N. Y.....50 Church St.
Chicago, Ill.....1821 Builders' Bldg.	Albany, N. Y.....36 State St.
Philadelphia, Pa.....810 Commercial Trust Bldg.	Buffalo, N. Y.....733 Ellicott Square Bldg.
Harrisburg, Pa.....Security Trust Bldg.	

The GOOD ROADS Machinery Co., Inc.
"Snow Plow Headquarters"
KENNETT SQUARE, PA.

SHOP SPECTATOR— PEST OR PLEASURE

CONTINUED FROM PAGE 54

salesman. Then the truck should be sent to the service division for final instructions for repairs."

"The customer should be kept out," declared Mr. Leach, "and the Curtis Company is handling this very well by having the service receiving room on the first floor and the service shop on the third. No one can get into the service shop without a pass. It has been found that if truck drivers are permitted in the shop they will take up much of the serviceman's time and the job will cost the driver's employer more than it should."

"The question is a difficult one to solve," admitted Mr. Jenkins. "The customer should be kept out as much as possible. His presence, especially if he insists on talking, demoralizes the mechanic and interferes with business. But we are forced to make an exception in the case of the customer who wishes to see what is being done to his truck. Most mechanics do not want an outsider hanging over them and they cannot do their best work under such conditions, but on the other hand many owners insist on seeing what is going on in their truck. However, a skeptical owner who has been allowed behind the lines once or twice to see the work he ordered and will pay for is being conscientiously done, soon will acquire confidence in the mechanics and the dealer, and will not want to go in. Our shop is three floors away from where the trucks are checked in, and that helps a lot."

● Inaccessible ●

THEY certainly should be kept out," Mr. Stephens said without hesitation. "Our service department is on the third floor. We have a service salesman. As a truck is run in for service, he steps up to the driver with a blank, fills out the necessary information for repairs, and calls a man who puts it on the elevator, unless it is a quick job which can be done on the main floor. The driver of the truck never gets as far as the elevator. We provide a comfortable waiting room near the service entrance for those who wish to wait, otherwise the service salesman calls the owner or driver on the phone as soon as work is finished. It is essential to us, in a shop which must run with extreme efficiency in order to get out the work, to keep owners and drivers out of the service department. In order to get up there owner or driver must have a pass."

"Customers should be kept out of

the service shop but this cannot be done on the whole," in the estimation of Mr. Davis. "Our shop is on the same floor as the service area but with a wall between through which is the driveway. This is closed as much as possible. Operation of this door is by electricity. Then there is a sign of 'No Admittance' at the entrance. The caution stops some of the visitations but not all. Some customers are bound to follow their truck through the door into the shop, and it would be poor policy to eject them. The chief objection to customers watching work done on the truck is in the fact that they cannot as a rule understand the charges made at flat rates on repairs that with skilled workmen and highly modern machinery and tools are quickly dispatched. In that case they are apt to object to amount of bill."

● No Admittance ●

THE Mack branch at Milwaukee has little trouble in keeping owners and drivers out of the service shop. The receiving floor is large and just off it is a room for the drivers. The shop is shut off by a large gate and entrance to it is through a door on which the "No Admittance" sign is painted.

"Customers should be kept off the service floor," said C. C. Morgan, manager of the branch, "because they take up much of the mechanics' time, and there have been instances where tools have been taken by drivers. The mechanics do not want the customers or the drivers in the shop. While the rule is that no one must be admitted to the shop, there are exceptions to it. If a driver is in the shop for only a short time, he is permitted to stay there, but if he stays too long, he is brought into the office and told of the situation and of the rule. We try to show the customer and the driver that by his being on the service floor and conversing with the mechanics, his job in reality is costing him more because of the time lost by the serviceman. There are times when we must take the customer into the shop to consult with him about the service job, and show him what we think should be done."

Ralph J. Rieman, president and general manager of Kam-Rieman Co., Inc. (G.M.C.), Buffalo, N. Y., looked at the matter from the standpoint of the city dealer and of the dealer in the smaller localities.

"Customers should be kept out but I haven't discovered any way of doing

it," he reasoned. "It is possible in the big shops but I do not see how it can be done effectively in a medium-size or small shop. Some owners are not fussy about repairs on their personal car, but they expect a truck in their business to go on forever without repairs, so that when a driver reports need of repairs this type of owner follows it up carefully."

While opining that customers should be kept out, T. E. Swain, manager, Reo Motor Car Co., Oakland, Calif., said: "In our place we have the shop on the same floor as the balance of the plant and we can't really keep them out. There are two reasons why we cannot enforce the rule strictly: we cannot offend the customer, and we cannot let him think we are hiding anything from him. Sometimes it is necessary to take the customer into the shop and discuss something about his truck with him, but we don't permit him to go in and sit on the running board and talk things over with the mechanics. The mechanics are instructed not to talk unless they have been asked a definite question. Truck owners who drive their own trucks are the hardest to deal with in this respect. Often they want to discuss methods of operation and kindred topics and there must be some leeway, but the whole situation must be handled very diplomatically."

The C. H. Wells Co. (Chevrolet), Seattle, Wash., enforces a strict "No Admittance" to the shop. Should there be cause for an exception, explained T. H. Kirksey, in charge of truck sales, the visitor is accompanied by the shop foreman. This eliminates the evil of the practice and reduces the time spent in the shop by the customer to the minimum. Adherence to this rule does not react unfavorably when universally enforced.

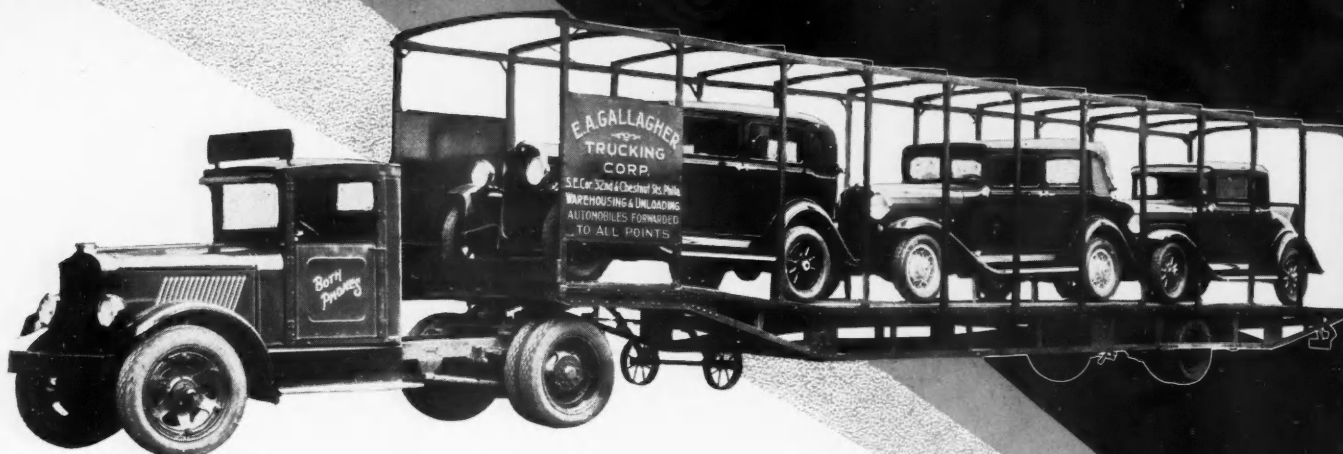
● Moral Effect ●

BY all means customers should be kept out of the service shop," said C. E. Anderson, sales manager, General Motor Truck Co., Birmingham, Ala., "but just how it is going to be done successfully I am not prepared to say. I believe it is well to exclude the customer from the shop as nearly as possible because of the psychological effect upon the customer himself. Just as it is better for an ill patient not to know too much about his condition and exactly what variety of treatment he gets in the operating room, so is it better for the truck man not to see his vehicle when it is dismantled and undergoing repairs. It upsets his ideas of the capabilities of his truck unless he is a really experienced mechanic."

RELAY



for **SEMI-TRAILERS**
ESPECIALLY *because*



① HORIZONTAL CUSHIONING

*Eliminates jars in coupling,
starting and running -*

••ASK USERS••

Relay starts the trailer before the rear wheels of the tractor, and the load of the trailer helps start the driving wheels *smoothly*, and with added power. Too, this horizontal flexibility between trailer and tractor saves over half the shocks of running. And it allows smooth, gradual coupling, without the usual slam and jar.

② DOUBLED TIRE LIFE -

*and tires are a big item in
this service -*

••ASK USERS••

The tires on Relay tractors *hug* the road because Relay cushioning reduces bounce and scuff. This greatly adds to the mileage. The increased traction on Relay driving wheels also reduces slide, spin and skid - another vital saving in rubber.





③ BETTER TRACTION — — *gives added safety — and permits carrying an added four wheel trailer even in bad going*

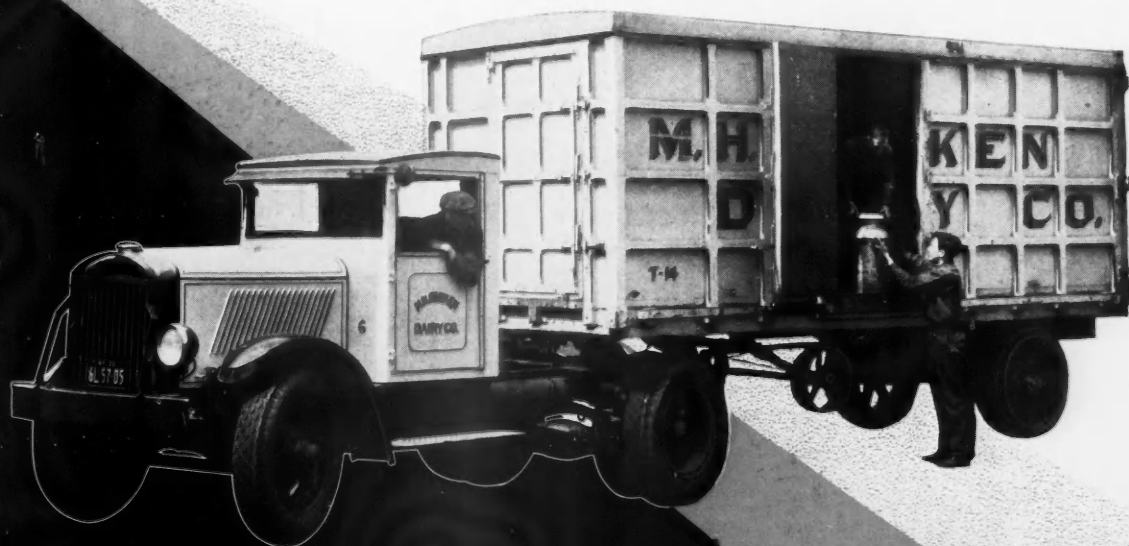
• • ASK USERS • •

The Relay oscillation automatically increases the traction as much as *four* times, in starting, going over the obstructions and stopping. A safety factor that means dollars in trailer operation. In bad going the four wheel trailer can still be carried with safety.

④ GREATLY IMPROVED RIDING QUALITIES — — *saves the driver, mechanism, and cargo —*

• • ASK USERS • •

Trailers average high mileages daily. Drivers of Relay tractor-trailer trains *know* that Relay eliminates half the usual impacts. This saves the driver, protects the mechanism, gives added safety to the cargo.



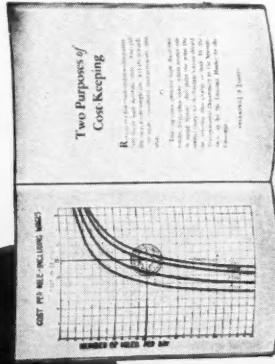
RELAY MOTORS CORPORATION will gladly send you your copy of this monograph on "Trucking Costs." Please sign this card and return.

Name of Company

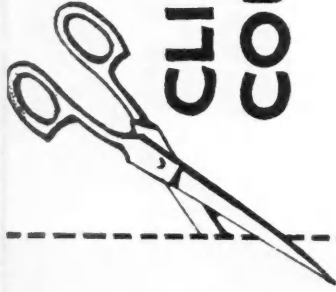
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Signature

Title



A valuable 48 page book just published



CLIP & MAIL THIS
COUPON TODAY

Why Relay Saves 3¢ Per Average Mile

THE Relay Drive does horizontally what the springs do vertically. The load instead of being rigidly fixed above the center of the rear wheels is free to swing pendulum-like below the wheel center. This horizontal oscillation reduces the shocks of travel approximately one half; uses the load to help propel and retard the vehicle; and gives greatly added traction. Use of the oscillating drive reduces tire costs one-third, fuel cost a tenth, and depreciation and maintenance costs one-fourth each, giving an average saving in the total cost of transportation of 3¢ per mile.

The results of a questionnaire to 300 Relay owners show actual tire mileage 68% greater than with conventional trucks. By interposing a horizontal defense against road shock, the impacts suffered over normal roads at normal speeds are shown to be reduced approximately one-half. If a conventional truck has a life of 4

years, the Relay truck will have a life one-third greater, or 5 2/3 years. The lowered im-

pacts result in reduced crystallization in all moving parts. This reduction gives an average saving in repairs amounting to more than a third. These lessened road blows naturally benefit the cargo as well as the truck. Less breakage of perishable goods, better condition of milk, furniture, flowers, etc. are the results. A truck that can negotiate difficult road conditions gives added daily mileage. Speed need not be lessened because of rough going. More time is spent on the road thus further increasing average mileages.

The savings with Relays have been proved by the experience of hundreds of owners, — 3¢ per average mile.



RELAY MOTORS CORP., Lima, Ohio

Gentlemen,
Here's to You! . . .

COMMERCIAL CAR JOURNAL AND OPERATION & MAINTENANCE

TABLE OF TRUCK SPECIFICATIONS

Corrected Each Month From Data
Supplied Direct by Manufacturers

(KEY TO ABBREVIATIONS ON PAGE 80)

SPECIFICATIONS of the new line of Dodge Brothers trucks, described on page 34, and of the new Studebaker models, which were described in the August issue, are listed in tables this month. Other models added to tables in this issue are:

Brockway; 141 2½-ton.

Indiana: 141 2½-ton, 220 3½-4-ton.

Fisher Standard; Super 6 3½-ton, 150-A six-wheeler.

FWD; Sno Special 4-ton, M5 5-ton, M7 7½-ton.

Gramm-Bernstein; J 1½-ton.

International Harvester: A-6 3-ton, tractor-trucks AL-3, A-6.

Maccar; 86A 5-ton.

Paige; 1500 lb.

Stewart; 40X 1½-ton.

Walter: tractor-trucks FBD, FBRD.



R. G. Hatch, Advertising Manager,
Stewart Motor Corp., Buffalo, N. Y.



H. H. Burdick, Advertising Dept.,
General Motors Truck Co., Pontiac



A. G. Crockett, Sales Promotion,
Mack Trucks, Long Island City, N. Y.



B. W. Wilkins, Engineering Dept.,
Reo Motor Car Co., Lansing, Mich.

The unquestioned trust which the truck industry places in this Table of Truck Specifications is due to the splendid collaboration of men at the factories who each month correct the statistical data and keep it up-to-date. For their valued cooperation in making the data authentic the Commercial Car Journal makes this acknowledgment of gratefulness and knows that those who make use of the Table will join in saying, "Gentlemen, here's to you!" (Next month the tribute will be extended to another group of collaborators.)

Line Number	Make, Model and Capacity	General				Tire Size		Make and Model	Engine										Fuel System	Electrical System	Line Number					
		Chassis Price	Standard W.B.	Max. W.B. Furnished	Gross Vehicle Wt. (See Key Note)	Chassis Wt. (Stripped)	Front		Rear	Number of Cylinders Bore and Stroke	Piston Displacement	N.A.C.C. Rated H.P.	Max. Brake H.P. at Specified R.P.M.	Valve Arrangement	Camshaft Drive	Piston Material	Dia. Main Bearings	Length Main Bearings	No. Main Bearings	Oiling System		Governor Make	Carburetor Make	Fuel Feed	Ignition System Make	Generator, Starter Make
1000 Pounds																										
1	Chevrolet Int. Com.	400	107	107	.....	1815	B 4.50/20	B 4.50	Own	6-3 1/2 x 3 1/2	193.9	26.3	H	.....	.....	.....	.....	.....	PG	No	Car	P	D-R	D-R	1
2	Dodge Bros. UF-10	435	109	.....	.....	1925	B 5.00/19	B 5.00/9	Own	6-3 1/2 x 3 1/2	196	21.0	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	2
3	Dodge Bros. F-10	515	109	.....	.....	2025	B 5.25/19	B 5.25/9	Own	6-3 1/2 x 3 1/2	189.8	23.4	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	3
4	Fargo Packet	595	109	.....	.....	1935	B 5.00/19	B 5.00/9	Own	6-3 1/2 x 3 1/2	174.9	21.6	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	4
5	Gen. Motors T11-1001	625	109	.....	3800	1980	B 5.00/19	B 5.00/9	Pontiac	6-3 1/2 x 3 1/2	200.3	26.3	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	5
6	Reo. Jr. 15	785	115	.....	.....	1935	B 6.00/18	B 6.00/8	Con 16E	6-3 1/2 x 4	214.7	27.3	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	6
7	Rugby	614	.....	.....	4000	2150	B 5.00/19	B 5.00/9	Con 22-A	6-3 1/2 x 4	199.0	25.3	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	7
8	Whippet	96A	360	103	103	1691	B 4.75/19	B 4.75/9	Own	4-3 1/2 x 4 1/2	145.7	15.6	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	8
9	Willys Six	98B	525	110	110	1903	B 5.00/19	B 5.00/9	Own	6-3 1/2 x 3 1/2	193.0	25.3	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	9
1500 Pounds																										
10	Fargo Clipper	725	.....	.....	.....	2340	B 5.50/18	B 5.50/18	Own	6-3 1/2 x 4 1/2	195.6	23.4	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	10
11	Fisher Standard Jr. B.	120	.....	.....	6000	2650	B 5.50/20	P 30x5	Con W10	4-3 1/2 x 4 1/2	200.5	24.0	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	11
12	Fisher Standard Jr. B.	120	.....	.....	6000	2650	B 5.50/20	P 30x5	Con 17E	4-3 1/2 x 4 1/2	214.7	27.3	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	12
13	Gen. Motors T15-1501	695	130	141	5400	2625	B 5.50/20	B 5.50/20	Pontiac	6-3 1/2 x 3 1/2	200.3	26.3	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	13
14	Int. Harv'tr Spec. Del.	124	124	141	5200	2200	B 5.25/20	B 5.25/20	Wau XA	4-3 1/2 x 4 1/2	173.0	19.6	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	14
15	Int. Harvester. AW-1	136	136	136	5495	2620	B 5.25/20	B 5.25/20	Wau XA	4-3 1/2 x 4 1/2	173.0	19.6	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	15
16	Palge	860	115	.....	4930	2465	B 5.50/19	B 5.50/19	Own	6-3 1/2 x 4 1/2	224.0	25.3	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	16
17	Relay	15A	1370	131	.....	3750	P 30x5	P 30x5	Con 17E	6-3 1/2 x 4 1/2	214.7	27.3	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	17
18	Studebaker	GN-P	845	115	.....	2325	B 6.00/19	B 6.00/19	Own	6-3 1/2 x 4 1/2	221.4	27.3	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	18
1 Ton																										
19	Acme	17	1060	136	.....	6400	3100	P 30x5	Con 29L	6-2 1/2 x 4 1/2	185.0	19.8	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	19
20	Atterbury	A-6	1095	132	145	6915	3530	P 30x5	Lyc WRC	6-2 1/2 x 4 1/2	185.0	18.2	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	20
21	Available	T-10	.....	.....	.....	9000	4000	P 30x5	Con 18E	6-3 1/2 x 4 1/2	215.0	27.3	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	21
22	Brockway	.....	.....	.....	.....	6000	3200	P 30x5	Con	6-3 1/2 x 4 1/2	214.7	27.3	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	22
23	Brockway	.....	.....	.....	.....	6500	3400	P 30x5	Con	6-3 1/2 x 4 1/2	248.2	27.3	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	23
24	Commerce	S-11	1600	142	162	3900	3000	P 30x5	Bud HS6	6-3 1/2 x 4 1/2	241.6	27.3	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	24
25	Day Elder 60	1195	135	156	6000	3200	B 6.00/20	B 6.00/20	Con 25A	6-3 1/2 x 4 1/2	214.7	27.3	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	25
26	Diamond T	200	785	128	128	6500	3050	P 30x5	Bud H199	4-3 1/2 x 4 1/2	198.8	22.5	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	26
27	Diamond T	215	885	135	135	6500	3150	P 30x5	Bud 1214	4-3 1/2 x 4 1/2	214.7	27.3	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	27
28	Fargo Freight	795	.....	.....	.....	2725	B 6.00/20	B 32x6	Own	6-3 1/2 x 4 1/2	174.9	21.6	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	28
29	Federal D-1 1 1/2 Ton	830	131	151	7500	3185	B 6.00/20	P 32x6	Con W10	4-3 1/2 x 4 1/2	200.5	24.0	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	29
30	Federal D-1 1 1/2 Ton	830	131	151	7500	3260	B 6.00/20	P 32x6	Con 17E	6-3 1/2 x 4 1/2	215.0	27.3	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	30
31	Fisher Standard	10A	1090	132	145	7500	3400	P 30x5	Con 17E	6-3 1/2 x 4 1/2	214.7	27.3	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	31
32	Garford	1600	142	162	7500	3900	P 30x5	P 30x5	Bud HS6	6-3 1/2 x 4 1/2	241.6	27.3	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	32
33	Gen. Motors T17-1703	745	130	141	6000	3200	B 7.00/20	B 7.00/20	Pontiac	6-3 1/2 x 5	220.9	22.5	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	33
34	Gramm-Bernstein	10	129	146	7000	3100	P 30x5	P 30x5	Lyc CT	4-3 1/2 x 5	220.9	22.5	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	34
35	Hahn	7H	124	124	6500	3100	P 30x5	P 30x5	Con 29L	6-2 1/2 x 4 1/2	185.0	19.8	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	35
36	Indiana	60	132	141	6000	3200	P 30x5	P 30x5	Con	6-3 1/2 x 4 1/2	214.7	27.3	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	36
37	Indiana	200	137	141	6500	3435	P 30x5	P 32x6	Wis	6-3 1/2 x 4 1/2	218.9	25.3	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	37
38	Indiana	200	137	141	6500	3400	P 30x5	P 30x5	Con	6-3 1/2 x 4 1/2	248.2	27.3	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	38
39	Int. Harv. 6 Sp. Spec.	124	124	124	6213	2513	P 30x5	P 30x5	Wau XA	4-3 1/2 x 4 1/2	173.0	19.6	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	39
40	Kenworth	70	1375	140	152	7000	3450	P 30x5	Con 18E	6-3 1/2 x 4 1/2	214.7	27.3	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	40
41	Kissel	Exp.	140	140	6500	3780	P 34x5	P 34x5	Own	4-3 1/2 x 5 1/2	459.4	24.1	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	41
42	Kleiber 51	1200	140	.....	6000	3000	P 30x5	P 30x5	Con 18E	6-3 1/2 x 4 1/2	214.7	27.3	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	42
43	LaFrance-Republic A-1	1090	132	.....	6000	3000	B 5.50/20	P 32x6	Lyc WRC	6-2 1/2 x 4 1/2	185.0	19.8	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	43
44	LaFrance-Republic A-1	1090	132	.....	6000	3000	B 5.50/20	P 32x6	Lyc WRC	6-2 1/2 x 4 1/2	185.0	19.8	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	44
45	Mack BL	2500	148	148	.....	86.00/20	DB6.00/20	Own BL	Own BL	6-3 1/2 x 4 1/2	214.7	27.3	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	45
46	Relay	15AB	1400	131	162	3800	P 30x5	P 30x5	Bud HS6	6-3 1/2 x 4 1/2	241.6	27.3	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	46
47	Relay	S11	1095	129	162	4050	P 30x5	P 30x5	Bud HS6	6-3 1/2 x 4 1/2	241.6	27.3	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	47
48	Reo	DF Tonner	1095	129	162	3185	B 6.00/20	P 32x6	Own	6-3 1/2 x 4 1/2	268.3	27.3	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	48
49	Sanford	7	124	124	.....	3100	P 30x5	P 30x5	Con 31 L	6-2 1/2 x 4 1/2	185.0	19.8	L	.....	.....	.....	.....	.....	FF	No	Str	V	D-R	D-R	49
50	Selden	7	124	124</																					

Line Number	Radiator Make	Clutch	Gear Set		Universal Make and No.	Rear Axle			Front Axle		Brakes		Frame		Body Mounting Data		Springs			Auxiliary Type	Line Number					
			Type and Make	Make and Model		Location	No. of Forward Speeds	Aux. Locat. and Speeds	Make and Model	Final Drive and Type	Drive and Torque	Gear Ratios	Make and Model	Service	Area Service Brakes	Hand	Steering Gear Make	Dim. Side Rail	Type			Cab to Rear of Frame	Cab to Rear Axle	Width of Frame	Front	Rear
1	Har	P.Own	Own Int.	U	3	Own	Own Int.	S	3.82	12.7	Own Int.	L4IH		Own	5x	C		26%					1000 Pounds			
2	Own	D.Own	Own	U	3	Own	Own	S	4.66			L4IH				C										
3	Lon	P.Own	Pontiac	U	3	M.M.	Pontiac	S	4.42	14.3	Own	L4IH				C										
4	McC	P.B&B	W-G	U	3	Spl	Sal	S	4.7	14.7	Sal	L4IH	200	War	5x1 1/2 x 1/2	C										
5	McC	P.B&B	War	U	3	Spl	Adams	S	4.7	14.7	Adams	L4IH	178	War	5x2 x 1/2	C										
6	Fed	P.B&B	Own	U	3	M.M.2	Own	S	4.55	14.7	Own	B04YM	190	2X	4 1/2 x 1 1/2 x 1/2	C										
7	Fed	P.B&B	Own	U	3	M.M.2	Own	S	4.89	14.1	Own	B4IM	147	Own	5 1/2 x 1 1/2 x 1/2	C										
10	Own	D.Own	Own	U	3	Own	Own	S	4.9	15.5	Own	L4IH	362	TX	Ros	6 1/2 x 2 1/2 x 1/2	C									
11	Lon	P.Own	B-L 214	U	4	Blo 2	Sal F	S	5.37	34.4	Sal F	L4IH	362	TX	Ros	6 1/2 x 2 1/2 x 1/2	C									
12	Lon	P.Own	Own	U	3	M.M.	Tim 51500	S	4.86	16.1	Tim 11709	B4IM	308	41	Jac	6 1/2 x 1 1/2 x 1/2	C									
13	Lon	Roc	M.M.	U	3	M.M.4	Eat 502	S	4.45	15.1	Eat 200F	BE4IM	256	21	Ros	4 1/2 x 1 1/2 x 1/2	C									
14	Mod	Roc	MM-O	U	3	MM4	Eat 517	S	4.45	17.4	Eat 217	B4IM	212	21	Ros	4 1/2 x 1 1/2 x 1/2	C									
15	Lon	P.Own	War T-71	U	4	U-P 2	Sal M	S	4.9	17.4	Sal	4IH	187	T	Ros	5 1/2 x 1	C									
16	Lon	B&B	War T-9	U	4	Blo	Own	S	6.00	38.4	Col 5540	B4IM	227	Ros	5 1/2 x 2 x 1/2	C										
17	Lon	P.Own	W-G	U	3	Spl	Own	S	4.7	15.1	Own	B4IM	227	Ros	5 1/2 x 2 x 1/2	C										
18	Lon	P.Own	W-G	U	3	Spl	Own	S	4.7	15.1	Own	B4IM	227	Ros	5 1/2 x 2 x 1/2	C										
19	Per	P.B&B	Ful	U	4	No	Blo 3	S	5.83	35.9	Tim 11703	L4IH	380	TX	Ros	4 1/2 x 3 1/2 x 1/2	C									
20	Fed	D.B-L	B-L	U	4	No	Spl	S	5.83	35.9	Tim 11703 H	L4IH	136	TX	Ros	5 1/2 x 2 1/2 x 1/2	C									
21	You	D.B-L	B-L 214	U	4	No	Blo	S	5.83	37.4	Shu 5429	L4IH	136	TX	Ros	5 1/2 x 2 1/2 x 1/2	C									
22	G&O	P.B&B	War	U	3	No	Spl 2	S	5.59	21.8	Col	B4IM	190	TX	Ros	5 1/2 x 2 1/2 x 1/2	C									
23	Lon	P.B&B	B-L	U	3	No	Spl 2	S	5.59	21.8	Col	C4IM	190	TX	Ros	5 1/2 x 2 1/2 x 1/2	C									
24	Lon	P.B-L	B-L 20	U	4	No	Blo	S	5.1	25.5	Col 5530	B4IM	190	TX	Ros	5 1/2 x 2 1/2 x 1/2	C									
25	G&O	P.B&B	W-G T9	U	4	No	Spl	S	5.6	36.3	Tim 30010	B4IM	205	TX	Ros	5 1/2 x 3 1/2 x 1/2	C									
26	G&O	P.B&B	W-G	U	4	No	Spl 2	S	5.59	21.8	Col	L4IH	244	TX	Ros	6 1/2 x 1 1/2 x 1/2	C									
27	G&O	P.B&B	W-G	U	4	No	Spl 2	S	5.59	21.8	Col	L4IH	244	TX	Ros	6 1/2 x 1 1/2 x 1/2	C									
28	Own	P.Own	Own	U	3	No	U-P 2	S	5.67	37.2	Own	B4IM	308	41	Jac	6 1/2 x 1 1/2 x 1/2	C									
29	Lon	P.B&B	W-G T9	U	4	No	Spl	S	5.67	37.2	Own	B4IM	308	41	Jac	6 1/2 x 1 1/2 x 1/2	C									
30	Lon	P.B&B	W-G T9	U	4	No	Spl 2	S	5.67	37.2	Own	B4IM	308	41	Jac	6 1/2 x 1 1/2 x 1/2	C									
31	Lon	P.B-L	B-L 214	U	4	No	Blo 3	S	5.83	37.4	Tim 11703H	L4IH	380	TX	Ros	6 1/2 x 2 1/2 x 1/2	C									
32	Lon	P.B-L	B-L 20	U	4	No	Blo	S	5.1	25.5	Col 5530	B4IM	308	41	Jac	6 1/2 x 1 1/2 x 1/2	C									
33	Lon	P.Own	Own	U	3	No	M.M.	S	4.83	16.0	Tim 11709	B4IM	308	41	Jac	6 1/2 x 1 1/2 x 1/2	C									
34	Own	D.Ful	Ful DU-10	U	3	No	Spl	S	5.83	37.4	Tim 11703H	L4IH	230	TX	Ros	5 1/2 x 2 1/2 x 1/2	C									
35	G&O	P.B&B	W-G	U	3	No	Spl	S	5.59	21.8	Col	L4IH	230	TX	Ros	5 1/2 x 2 1/2 x 1/2	C									
36	G&O	P.B&B	War	U	3	No	Spl 2	S	5.59	21.8	Col	B4IM	190	TX	Ros	5 1/2 x 2 1/2 x 1/2	C									
37	Lon	P.B&B	B-L	U	3	No	Spl 2	S	5.59	21.8	Col	C4IM	190	TX	Ros	5 1/2 x 2 1/2 x 1/2	C									
38	Lon	P.B&B	B-L	U	3	No	Spl 2	S	5.59	21.8	Col	C4IM	190	TX	Ros	5 1/2 x 2 1/2 x 1/2	C									
39	Lon	Roc	M.M.	U	3	No	M.M.4	S	5.29	12.4	Eat 430F	BE4IM	292	21	Ros	6 1/2 x 1 1/2 x 1/2	C									
40	Per	P.B-L	B-L 214	U	4	No	Spl	S	5.59	21.8	Col	BE4IM	292	21	Ros	6 1/2 x 1 1/2 x 1/2	C									
41	McC	D.W-G	W-G T38L	U	3	No	M.M.	S	5.16	18.9	Tim 1452	T2IM	...	21	Ros	4 1/2 x 3 1/2 x 1/2	C									
42	Fed	D.B-L	B-L 20	U	4	No	Spl	S	4.8	5.9	Tim 11710H	L4IH	...	...	Ros	5 1/2 x 3 1/2 x 1/2	C							
43	G&O	P.B&B	Ful Wo-BB	U	4	No	S-P 3	S	5.86	36.1	Tim 11710H	L4IH	...	...	Ros	5 1/2 x 3 1/2 x 1/2	C							
44	G&O	P.B&B	Ful Wo-BB	U	4	No	S-P 3	S	5.86	36.1	Tim 11710H	L4IH	...	...	Ros	5 1/2 x 3 1/2 x 1/2	C							
45	Own	D.Own	Own	U	3	No	Spl	S	5.83	37.4	Tim 11703H	L4IH	302	FX	Ros	7 1/2 x 3 x 1/2	T									
46	Lon	B&B	War T-9	U	4	No	Blo	S	5.14	25.7	Col 5540	L4IH	...	...	Ros	6 1/2 x 1 1/2 x 1/2	C							
47	Lon	P.B-L	B-L 20	U	4	No	Blo	S	5.14	25.7	Col 5540	L4IH	...	...	Ros	6 1/2 x 1 1/2 x 1/2	C							
48	Own	P.Own	Own	U	3	No	Cle	S	5.2	17.1	Own	L4IH	280	TX	Ros	6 1/2 x 3 1/2 x 1/2	C									
49	Fed	D.B-L	B-L 20	U	4	No	Blo	S	5.33	22.0	Tim	...	...	...	...	Ros	7 1/2 x 3 1/2 x 1/2	C					
50	Own	P.B&B	Ful	U	4	No	Blo	S	5.8	36.3	Tim 52000	SF	...	...	Ros	6 1/2 x 1 1/2 x 1/2	C							
51	Lon	P.B-L	B-L 20	U	4	No	Blo	S	5.1	25.5	Col 5530	B4IM	...	...	Ros	6 1/2 x 1 1/2 x 1/2	C							
52	Fed	P.B&B	Cla	U	4	No	Spl	S	5.6	35.8	Sal	B4IM	...	...	Ros	6 1/2 x 1 1/2 x 1/2	C							
53	Fed	P.B&B	Cla	U	4	No	Spl	S	5.6	35.8	Sal	B4IM	...	...	Ros	6 1/2 x 1 1/2 x 1/2	C							
54	McC	P.Own	Own	U	3	No	Spl	S	4.64	13.8	Own	B4IM	348	TX	Ros	6 1/2 x 3 x 1/2	C									
55	McC	P.Own	Own	U	3	No	Spl	S	4.64	13.8	Own	B4IM	348	TX	Ros	6 1/2 x 3 x 1/2	C									
56	Own	P.Own	Own 15B	U	3	No	Spl	S	5.36	18.6	Own 15B	O2IM	226	2X	Own	6 1/2 x 3 x 1/2	C									
57	Own	P.Own	Own 3B	U	3	No	Spl	S	4.73	17.8	Own 4D	L4IH	276	TI	Ros	6 1/2 x 3 x 1/2	C									
58	G&O	P.B&B	B-L	U	3	No	Spl	S	5.12	21.3	Col	C4IM	...	...	Ros	4 1/2 x 2 1/2 x 1/2	C							
59	G&O	P.B&B	B-L	U	3	No	Spl 2	S	5.12	21.3	Col	C4IM	...	...	Ros	4 1/2 x 2 1/2 x 1/2	C							
60	Per	D.B-L	B-L 31	U	4	No	Blo	S	6.25	29.5	Shu 5405	C2XM	189	21	Ros	5 1/2 x 3 x 1/2	T									
61	Lon	D.B-L	B-L 20	U	4	No	Spl 3	S	5.57	27.8	Tim 11703 H	L4IH	...	...	Ros	5 1/2 x 3 x 1/2	C							

Line Number	Radiator Make	Clutch	Type and Make	Gearset		Universal Make and No.	Rear Axle		Front Axle	Brakes		Frame		Body Mounting Data		Springs		Auxiliary Type	Line Number									
				Make and Model	Location		No. of Forward Speeds	Aux. Locat. and Speeds		Make and Model	Final Drive and Type	Drive and Torque	Gear Ratios	R-reduc. in High	R-reduc. in Low	Service	Area Service Brakes			Hand	Steering Gear Make	Dim. Side Rail	Type	Cab to Rear of Frame	Cab to Rear Axle	Width of Frame	Front	Rear
1	Lon	P.Own	Mun	U	4	No	Spl	Tim 5261	S $\frac{1}{2}$	H 6.2	34.5	Tim 11710	B4IM	377	TX	Jac	6x2 $\frac{1}{2}$ x $\frac{1}{2}$	P	87	11 $\frac{1}{2}$	48	34	38x2	50 $\frac{1}{2}$ x2 $\frac{1}{2}$	d	1		
2	Lon	D.B-L	B-L 20-4	U	4	No	Spl	Tim 5261	S $\frac{1}{2}$	H 5.83	29.6	Tim 11703H	B4IM	377	TX	Ros	6x2 $\frac{1}{2}$ x $\frac{1}{2}$	P	87	48	34	38x2	50 $\frac{1}{2}$ x2 $\frac{1}{2}$	N	2			
3	Lon	D.B-L	B-L 20-4	U	4	No	Spl	Tim 5261	S $\frac{1}{2}$	H 5.83	29.6	Tim 11703H	B4IM	377	TX	Ros	6x2 $\frac{1}{2}$ x $\frac{1}{2}$	P	87	48	34	38x2	50 $\frac{1}{2}$ x2 $\frac{1}{2}$	N	3			
4	Per	D.Own	Cov A-4J	U	4	No	Blo	Tim 54000H	BF	H 5.16	34.2	Col 4003	L4IH	278	TX	Ros	6x2 $\frac{1}{2}$ x $\frac{1}{2}$	C	94	60 $\frac{1}{2}$	34	40x2 $\frac{1}{2}$	54x2 $\frac{1}{2}$	N	4			
5	Own	D.B-L	Ful DU-10	U	4	No	Blo	Tim 52200H	BF	H 5.8	24.8	Tim 11703H	L4IH	230	TX	Ros	6x2 $\frac{1}{2}$ x $\frac{1}{2}$	C	97	57 $\frac{1}{2}$	30 $\frac{1}{2}$	38x2	50x2 $\frac{1}{2}$	N	5			
6	You	D.B-L	B-L 214	U	4	No	Spl	Tim 52200-H	SF	H 5.83	37.4	Tim 12703-H	L4IH	308	TX	Ros	6x2 $\frac{1}{2}$ x $\frac{1}{2}$	C	118 $\frac{1}{2}$	73 $\frac{1}{2}$	34	42x2 $\frac{1}{2}$	50x2 $\frac{1}{2}$	N	6			
7	Chl	D.B-L	B-L 20	U	4	No	Spl	Tim 52000H	BF	R 5.8	...	Tim 11703H	L4IH	380	TX	Ros	6x2 $\frac{1}{2}$ x $\frac{1}{2}$	C	110	66	34	41x2 $\frac{1}{2}$	50x2 $\frac{1}{2}$	N	7			
8	Chl	D.B-L	B-L 35	U	4	No	Spl	Tim K	BF	5.1	...	Tim	L4IH	...	TX	Ros	6x2 $\frac{1}{2}$ x $\frac{1}{2}$	C	110	66	34	41x2 $\frac{1}{2}$	50x2 $\frac{1}{2}$	N	8			
9	McC	P.B&B	B-L	U	4	No	Spl	Tim 52000H	BF	H 5.5	26.4	Shu	K2IM	432	TX	Ros	6x2 $\frac{1}{2}$ x $\frac{1}{2}$	C	99	54	34	40x2 $\frac{1}{2}$	54x2 $\frac{1}{2}$	N	9			
10	Lon	P.B&B	B-L	U	4	No	Spl 3	Col	SF	H 5.12	20.8	Col	C4IM	300	TX	Ros	6x2 $\frac{1}{2}$ x $\frac{1}{2}$	C	114	68	34	37x2 $\frac{1}{2}$	54x2 $\frac{1}{2}$	N	10			
11	Lon	P.Own	Own	U	4	No	M.M.5	Eat 1502	S $\frac{1}{2}$	H 5.66	22.6	Eat 430 F	BE4IM	346	21	CAS	6x $\frac{1}{2}$ x $\frac{1}{2}$ x $\frac{1}{2}$	T	127 $\frac{1}{2}$	81	34	32x2 $\frac{1}{2}$	52x3	N	11			
12	Lon	P.Own	Own	U	4	No	M.M.5	Eat 1502	S $\frac{1}{2}$	H 5.66	22.6	Eat 430 F	BE4IM	346	21	CAS	6x $\frac{1}{2}$ x $\frac{1}{2}$ x $\frac{1}{2}$	T	127 $\frac{1}{2}$	81	34	32x2 $\frac{1}{2}$	52x3	N	12			
13	Lon	P.Own	Own	U	4	No	M.M.5	Eat 1502	S $\frac{1}{2}$	H 5.66	22.6	Eat 430 F	BE4IM	346	21	CAS	6x $\frac{1}{2}$ x $\frac{1}{2}$ x $\frac{1}{2}$	T	127 $\frac{1}{2}$	81	34	32x2 $\frac{1}{2}$	52x3	N	13			
14	Lon	P.Own	Own	U	4	No	M.M.5	Eat 1502	S $\frac{1}{2}$	H 5.66	22.6	Eat 430 F	BE4IM	346	21	CAS	6x $\frac{1}{2}$ x $\frac{1}{2}$ x $\frac{1}{2}$	T	127 $\frac{1}{2}$	81	34	32x2 $\frac{1}{2}$	52x3	N	14			
15	Mod	P.Own	War T7	U	4	No	Spl	Eat 1518	SF	H 5.66	42.9	Eat 417F	BE4IM	295	21	Ros	6x $\frac{1}{2}$ x $\frac{1}{2}$ x $\frac{1}{2}$	T	110	68	34	42x2 $\frac{1}{2}$	52x3	N	15			
16	Per	P.B-L	B-L 214	U	4	No	Spl	Tim 54200H	SF	H 5.83	37.4	Cla F 304	L4IH	272	TD	Ros	6x $\frac{1}{2}$ x $\frac{1}{2}$ x $\frac{1}{2}$	P	126	82	34	39x2 $\frac{1}{2}$	52x3	N	16			
17	McC	D.W-G	W-G T38L	U	4	No	Spl	Tim 6462	W $\frac{1}{2}$	H 6.80	28.5	Tim 1526	T2IM	21	Ros	5x3 $\frac{1}{2}$ x $\frac{1}{2}$	T	100	64	34	38x2 $\frac{1}{2}$	50x2 $\frac{1}{2}$	N	17				
18	Own	D.B-L	B-L 20	U	4	No	Spl	Tim 52200H	B $\frac{1}{2}$	H 5.36	...	Tim 12703H	L4IH	448	TX	Ros	6x $\frac{1}{2}$ x $\frac{1}{2}$ x $\frac{1}{2}$	C	100	64	34	38x2 $\frac{1}{2}$	52x2 $\frac{1}{2}$	N	18			
19	G&O	P.B&B	WO-BB	U	4	No	Spl 3	Tim 52200H	SF	H 5.83	35.8	Tim 1170-H	L4IH	...	TX	Han	6x2x $\frac{1}{2}$	C	111	62 $\frac{1}{2}$	32 $\frac{1}{2}$	38x2	57 $\frac{1}{2}$ x2 $\frac{1}{2}$	N	19			
20	Mod	D.B-L	B-L 31	U	4	No	Spl	Tim 54000H	BF	R 5.83	28.0	Tim 12703H	L4IH	279	FD	Ros	6x2 $\frac{1}{2}$ x $\frac{1}{2}$	C	84	56	33	38x2 $\frac{1}{2}$	50x2 $\frac{1}{2}$	N	20			
21	Per	D.B-L	B-L 214	U	4	No	Spl	Tim 52200H	B-F	H 5.83	37.4	Tim 11703H	L4IH	452	TD	Ros	6x2 $\frac{1}{2}$ x $\frac{1}{2}$	C	117 $\frac{1}{2}$	74 $\frac{1}{2}$	37	38x2 $\frac{1}{2}$	54x2 $\frac{1}{2}$	N	21			
22	Per	D.B-L	B-L 214	U	4	No	Cle 3	Tim 54000H	BF	H 5.83	29.1	Tim 14703H	L4IH	...	TX	Ros	6x3x $\frac{1}{2}$	C	117 $\frac{1}{2}$	74 $\frac{1}{2}$	32	42x2 $\frac{1}{2}$	54x $\frac{1}{2}$	N	22			
23	Own	D.Own	Own BG	U	4	No	Spl 4	Own BG	SF	H 4.90	24.2	Own BG	O4IV	354	FX	Own	7x3x $\frac{1}{2}$	T	96	54	33 $\frac{1}{2}$	42x2 $\frac{1}{2}$	54x3	N	23			
24	Lon	D.B-L	B-L 35	U	4	No	Blo	Own 30	2R	6.45	34.5	Tim 14704H	...	...	...	Han	...	T	144	90	...	...	...	N	24
25	Lon	P.B-L	B-L 20	U	4	No	Blo	Own 20	2R	6.00	30.0	Col 5530	...	...	...	Han	...	T	133 $\frac{1}{2}$	83	...	...	...	N	25
26	Own	D.B-L	Own	U	4	No	Cle	Own	SF	H 5.2	34.3	Own	L4IH	289	TX	Ros	6x $\frac{1}{2}$ x $\frac{1}{2}$ x $\frac{1}{2}$	C	97	52	34	38x2 $\frac{1}{2}$	50x2 $\frac{1}{2}$	N	26			
27	Own	D.B-L	Own	U	4	No	Cle	Own	SF	H 5.2	34.3	Own	L4IH	289	TX	Ros	6x $\frac{1}{2}$ x $\frac{1}{2}$ x $\frac{1}{2}$	C	97	52	34	38x2 $\frac{1}{2}$	50x2 $\frac{1}{2}$	N	27			
28	Own	D.B-L	Own	U	4	No	Cle	Own	SF	H 5.2	34.3	Own	L4IH	289	TX	Ros	6x $\frac{1}{2}$ x $\frac{1}{2}$ x $\frac{1}{2}$	C	97	52	34	38x2 $\frac{1}{2}$	50x2 $\frac{1}{2}$	N	28			
29	McC	P.B&B	B-L 214	U	4	No	Spl	Sal	SF	H 5.38	34.5	Sal	S4IM	285	TI	War	6x2 $\frac{1}{2}$ x $\frac{1}{2}$	C	91 $\frac{1}{2}$	53 $\frac{1}{2}$	34	36x2	50x2 $\frac{1}{2}$	N	29			
30	Fed	D.B-L	B-L 20	U	4	No	Blo	Eat	SF	H 6.37	31.7	Eat	...	...	...	Ros	6x2 $\frac{1}{2}$ x $\frac{1}{2}$	C	86 $\frac{1}{2}$	46 $\frac{1}{2}$	...	...	...	N	30
31	You	D.B-L	B-L 35	U	4	No	Spl	Tim 54000H	BF	H 5.83	31.2	Tim 12703H	L4IH	452	TX	Ros	6x3x $\frac{1}{2}$	C	110	66	34	41x2 $\frac{1}{2}$	50x3	N	31			
32	Own	D.B-L	B-L 20	U	4	No	Blo	Tim 54200H	BF	H 5.1	...	Tim 12703H	L4IH	...	TX	Ros	6x2 $\frac{1}{2}$ x $\frac{1}{2}$	C	110	66	34	41x2 $\frac{1}{2}$	50x2 $\frac{1}{2}$	N	32			
33	Own	D.B-L	B-L 35	U	4	No	Blo	Tim 63702	WF	H 6.5	34.8	Tim 14704H	L4IH	...	TX	Ros	6x2 $\frac{1}{2}$ x $\frac{1}{2}$	C	140	90	...	...	...	N	33
34	Lon	D.B-L	B-L 35	U	4	No	Blo	Tim 63702	WF	H 6.5	34.8	Tim 14704H	L4IH	...	TX	Ros	6x2 $\frac{1}{2}$ x $\frac{1}{2}$	C	140	90	...	...	...	N	34
35	Lon	P.B-L	B-L 20	U	4	No	Spl	Tim 54000H	SF	H 5.8	29.2	Col 5530	...	...	...	Han	...	T	133 $\frac{1}{2}$	83	...	...	...	N	35
36	Per	D.B-L	B-L 20	U	4	No	Spl	Tim 52000H	BS	H 5.82	29.1	Tim 11703H	L4IH	219	TX	Ros	5x $\frac{1}{2}$ x2 $\frac{1}{2}$ x $\frac{1}{2}$	C	104	60	34	38x2 $\frac{1}{2}$	50x2 $\frac{1}{2}$	N	36			
37	Fed	P.B&B	War	U	4	No	Spl	Cla	BF	H 5.6	35.8	Cla	...	...	...	Ros	7 $\frac{1}{2}$ x2 $\frac{1}{2}$ x $\frac{1}{2}$	C	77 $\frac{1}{2}$	40 $\frac{1}{2}$	32	38 $\frac{1}{2}$ x2 $\frac{1}{2}$	50x2 $\frac{1}{2}$	N	37
38	Fed	P.B&B	War	U	4	No	Spl	Cla	BF	H 5.6	35.8	Cla	...	...	...	Ros	7 $\frac{1}{2}$ x2 $\frac{1}{2}$ x $\frac{1}{2}$	C	77 $\frac{1}{2}$	40 $\frac{1}{2}$	32	38 $\frac{1}{2}$ x2 $\frac{1}{2}$	50x2 $\frac{1}{2}$	N	38
39	Own	D.B-L	War	U	4	No	Spl	Cla	BF	H 5.6	35.8	Cla	...	...	...	Ros	7 $\frac{1}{2}$ x2 $\frac{1}{2}$ x $\frac{1}{2}$	C	77 $\frac{1}{2}$	40 $\frac{1}{2}$	32	38 $\frac{1}{2}$ x2 $\frac{1}{2}$	50x2 $\frac{1}{2}$	N	39
40	McC	Lon	WarASI-T9	U	4	No	Spl	Tim 53600	SB	H 5.66	35.8	Tim 30010-A1	B4IM	224	61.6	Ros	6x2 $\frac{1}{2}$ x $\frac{1}{2}$	C	194	85	34	38x2	50x2 $\frac{1}{2}$	N	40			
41	Own	P.Own	Own 20A	U	4	No	Spl	Own 20A	R	H 9.25	32.1	Own 20A	O2IM	384	2X	Own	5x $\frac{1}{2}$ x3 $\frac{1}{2}$	C	106 $\frac{1}{2}$	69 $\frac{1}{2}$	34	41x2 $\frac{1}{2}$	48x3	N	41			
42	Own	P.Own	Own 5B	U	4	No	Spl	Own 7C	S	H 6.67	23.4	Own 7D	L4IH	349	FX	Han	6x $\frac{1}{2}$ x $\frac{1}{2}$ x $\frac{1}{2}$	C	115 $\frac{1}{2}$	68 $\frac{1}{2}$	34 $\frac{1}{2}$	4						

Line Number	Make, Model and Capacity	General			Tire Size		Make and Model	Engine										Fuel System		Electrical System		Line Number					
		Chassis Price	Standard W.B.	Max. W.B. Furnished	Gross Vehicle Wt. (See Key Note)	Chassis Wt. (Stripped)		Front	Rear	Number of Cylinders Bore and Stroke	Piston Displacement	N.A.C.C. Rated H.P.	Max. Brake H.P. at Specified R.P.M.	Valve Arrangement	Camshaft Drive	Piston Material	Dia. Main Bearings	Length Main Bearings	No. Main Bearings	Oiling System	Governor Make		Carburetor Make	Fuel Feed	Ignition System Make	Generator, Starter Make	
2 Ton—Cont'd																											
1	Moreland.....RR-7	2025	158	9300	4000	P 32x6	P 32x6	Con 16C	6-3 1/2 x 4 1/2	248	32.7	70-1300	L	C	C	C	10 1/2	7	7	PC	No	Zen	M	A-L	A-L	1	
2	Noble.....146	2885	175	11850	4850	P 32x6	DP32x6	Bud HS6	6-3 1/2 x 4 1/2	241	32.7	57-2500	L	C	C	C	10 1/2	7	7	PC	No	Bu	Str	V	A-L	A-L	2
3	Omort.....200	124	148	11500	4800	P 32x6	DP32x6	Her OX	4-4 x 5	251	32.5	46-2000	L	C	C	C	10 1/2	7	7	PC	No	Bu	Str	V	A-L	A-L	3
4	Pierce-Arrow.....XA	3500	150	162	6280	S 36x4	DS36x5	Own XA	4-4 x 5 1/2	25	25	T	L	C	C	10 1/2	7	7	PC	No	Bu	Str	V	A-L	A-L	4
5	Pierce-Arrow.....FA	2450	140	180	3855	S 32x6	S 34x7	Own FA	6-3 1/2 x 5	29	29	10 1/2	7	7	PC	No	Bu	Str	V	A-L	A-L	5
6	Relay.....S11	2030	162	185	5500	P 36x6	DP36x6	Bud DS6	6-3 1/2 x 5	309	31.5	56-2000	L	L	L	L	12 1/2	7	7	PC	No	Bu	Str	V	A-L	A-L	6
7	Relay.....S11	2030	162	185	5500	P 36x6	DP36x6	Bud HS6	6-3 1/2 x 5	309	31.5	56-2000	L	L	L	L	12 1/2	7	7	PC	No	Bu	Str	V	A-L	A-L	7
8	Relay.....50	3860	161	6800	P 36x6	DP36x6	Bud DW6	6-3 1/2 x 5	331	33.7	73-2200	L	L	L	L	12 1/2	7	7	PC	No	Bu	Str	V	A-L	A-L	8
9	Reo.....FC	1645	152	.....	4025	P 32x6	DP32x6	Own	6-3 1/2 x 5	268	32.7	67-2800	L	L	L	L	12 1/2	7	7	PC	No	Sch	V	D-R	D-R	9
10	Reo.....FD	1745	168	.....	4075	P 32x6	DP32x6	Own	6-3 1/2 x 5	268	32.7	67-2800	L	L	L	L	12 1/2	7	7	PC	No	Sch	V	D-R	D-R	10
11	Reo.....FH	1545	142	.....	4165	P 32x6	DP32x6	Own	6-3 1/2 x 5	268	32.7	67-2800	L	L	L	L	12 1/2	7	7	PC	No	Sch	V	D-R	D-R	11
12	Sanford.....N	160	160	.....	4500	P 30x5	DP30x5	Con 16C	6-3 1/2 x 4 1/2	248	32.7	66-2900	L	L	L	L	10 1/2	7	7	PC	No	Str	V	D-R	D-R	12
13	Schacht De Luxe.....20	160	174	9500	4700	P 32x6	DP32x6	Con 16C	6-3 1/2 x 4 1/2	248	32.7	65-2600	L	L	L	L	10 1/2	7	7	PC	No	Zen	M	D-R	D-R	13	
14	Selden.....Unit 37	151	181	10000	4900	P 32x6	DP32x6	Con 16C	6-3 1/2 x 4 1/2	241	32.7	65-2760	L	L	L	L	10 1/2	7	7	PC	No	Zen	M	D-R	D-R	14	
15	Service.....40	3240	168	185	4900	P 36x6	DP36x6	Bud DS6	6-3 1/2 x 5	309	31.5	56-2000	L	L	L	L	12 1/2	7	7	PC	No	Zen	M	A-L	A-L	15	
16	Service.....S11	2030	162	.....	4500	P 32x6	DP32x6	Bud HS6	6-3 1/2 x 5	241	32.7	52-2200	L	L	L	L	10 1/2	7	7	PC	No	Zen	M	A-L	A-L	16
17	Sterling.....DB9-64	139	168	9000	3625	P 34x7	P 34x7	Con 16C	6-3 1/2 x 4 1/2	248	32.7	63-2500	L	L	L	L	10 1/2	7	7	PC	No	Zen	M	A-L	A-L	17	
18	Stewart.....29XS	1695	145	10235	4450	P 32x6	DP32x6	Lyc ASA	6-3 1/2 x 4 1/2	278	35.5	61-2600	L	L	L	L	10 1/2	7	7	PC	No	Str	V	D-R	D-R	18	
19	Studebaker.....S-50	148	160	.....	5900	P 32x6	DP32x6	Own	6-3 1/2 x 4 1/2	248	32.7	67-2800	L	L	L	L	10 1/2	7	7	PC	No	Str	V	D-R	D-R	19
20	White.....56	3125	165	175	5276	S 36x4	S 36x7	Own GRG	4-4 x 5 1/2	289	25.6	46-1700	L	L	L	L	11 1/2	7	7	PC	No	Str	V	D-R	D-R	20	
21	Wichita.....6-50	3250	165	Op	12500	5600	P 32x6	P 32x6	6-3 1/2 x 4 1/2	298	33.7	64-2200	L	L	L	L	12 1/2	7	7	PC	No	Str	V	D-R	D-R	21	
22	Witt-Will.....C2B	2450	158	12500	5400	P 32x6	DP32x6	Con 16C	6-3 1/2 x 4 1/2	248	32.7	66-3200	L	L	L	L	10 1/2	7	7	PC	No	Zen	M	D-R	D-R	22
23	Witt-Will.....C2W	2550	158	12500	5400	P 32x6	DP32x6	Con 16C	6-3 1/2 x 4 1/2	248	32.7	66-3200	L	L	L	L	10 1/2	7	7	PC	No	Zen	M	D-R	D-R	23
24	Witt-Will.....R2B	158	.....	12500	5820	P 32x6	DP32x6	Con 16R	6-4 x 4 1/2	311	38.4	72-2400	H	C	C	C	11 1/2	7	7	FP	No	Zen	M	D-R	D-R	24
25	Witt-Will.....R2	158	.....	13200	5800	P 32x6	DP32x6	Con 16R	6-4 x 4 1/2	311	38.4	72-2400	H	C	C	C	11 1/2	7	7	FP	No	Zen	M	D-R	D-R	25
2 1/2 Ton																											
26	Acme.....56 Spec.	3577	178	Op	13850	7050	P 34x7	DP34x7	Con 18R	6-4 x 4 1/2	339	38.4	82-2400	H	C	C	C	14 1/2	7	7	FP	Co	Str	V	A-L	A-L	26
27	Acme.....52	3770	186	Op	14550	7150	P 34x7	DP34x7	Con 18 R	6-4 x 4 1/2	339	38.4	82-2400	H	C	C	C	14 1/2	7	7	FP	Co	Str	V	A-L	A-L	27
28	Amer. LaF. Chief 9R.....H	3150	173	199	14390	6700	P 32x6	DP32x6	Con 16R	6-4 x 4 1/2	311	38.4	72-2400	H	C	C	C	11 1/2	7	7	PC	Ha	Str	V	A-L	A-L	28
29	Autocar D.....3500	150	192	15000	5300	P 34x7	DP34x7	Own	6-4 x 4 1/2	358	38.4	82-2400	L	L	L	L	13 1/2	7	7	FP	Ha	Str	V	A-L	A-L	29	
30	Available.....T-30	Op	Op	16000	5300	P 34x7	DP34x7	Wau ML	6-4 1/2 x 4 1/2	404	43.4	87-2500	L	L	L	L	13 1/2	7	7	FP	Wa	Str	V	A-L	A-L	30	
31	Available T-37, T-38V.....Op	Op	Op	16000	7500	P 34x7	DP34x7	Con 30B	6-4 1/2 x 4 1/2	311	38.4	73-2400	H	C	C	C	13 1/2	7	7	PC	KP	Str	V	A-L	A-L	31	
32	Brookway.....140	156	188	14000	5500	P 34x7	DP34x7	Her	6-4 1/2 x 4 1/2	326	32.8	94-1600	L	C	C	C	10	3	3	PC	Pe	Str	V	A-L	A-L	32	
33	Brookway.....141	156	188	14000	5500	P 34x7	DP34x7	Con	6-4 1/2 x 4 1/2	311	38.4	73-2400	H	C	C	C	13 1/2	7	7	PC	K-P	Str	V	A-L	A-L	33	
34	Brookway.....141	156	188	14000	5500	P 34x7	DP34x7	Con 33B	6-4 1/2 x 4 1/2	380	40.8	89-2400	H	C	C	C	13 1/2	7	7	PC	KP	Str	V	A-L	A-L	34	
35	Brookway.....170	170	200	17000	6800	P 32x6	DP32x6	Con 16C	6-3 1/2 x 4 1/2	248	32.7	66-3200	L	L	L	L	10 1/2	7	7	PC	No	Zen	M	A-L	A-L	35	
36	Brookway.....170	170	200	17000	6800	P 32x6	DP32x6	Con 16R	6-4 x 4 1/2	311	38.4	72-2400	H	C	C	C	11 1/2	7	7	FP	No	Zen	M	A-L	A-L	36	
37	Chicago.....1-24-A	2475	154	202	5773	B 7.50/20	DB7.50/20	Wau 6ML	6-4 1/2 x 4 1/2	358	38.4	77-2200	L	L	L	L	12 1/2	7	7	FP	Wa	Str	V	A-L	A-L	37	
38	Coleman.....C30	120	144	.....	7700	P 38x7	P 38x7	Bud DW6	6-3 1/2 x 5	331	32.7	73-2200	L	L	L	L	9 1/2	7	7	PC	Bu	Str	V	A-L	A-L	38
39	Commerce.....40	3240	168	185	4900	P 36x6	DP36x6	Bud BA-6	6-4 1/2 x 5 1/2	410	94.0	87-2000	L	L	L	L	12 1/2	7	7	PC	Bu	Str	V	A-L	A-L	39	
40	Commerce.....40	3240	168	185	4900	P 36x6	DP36x6	Bud DS6	6-3 1/2 x 5	309	31.5	56-2000	L	L	L	L	12 1/2	7	7	PC	No	Zen	M	A-L	A-L	40	
41	Corbitt 2 1/2-T. 15B6.....174	220	15500	5870	P 34x7	DP34x7	Con 16R	6-4 x 4 1/2	311	38.4	72-2400	H	C	C	C	11 1/2	7	7	FP	No	Zen	M	A-L	A-L	41		
42	Corbitt 2 1/2-T. 15W6.....183	224	15500	5870	P 34x7	DP34x7	Con 16R	6-4 x 4 1/2	311	38.4	72-2400	H	C	C	C	11 1/2	7	7	FP	No	Zen	M	A-L	A-L	42		
43	Day Elder 130.....2895	150	204	13000	5300	B 7.50/20	DB7.50/20	Wau 6ML	6-4 1/2 x 4 1/2	358	38.4	77-2200	L	L	L	L	12 1/2	7	7	FP	Wa	Str	V	A-L	A-L	43	
44	Diamond T.....551	2250	168	186	5600	P 32x6	DP32x6	Her WXC	6-4 1/2 x 4 1/2	339	38.4	75-2400	L	L	L	L	13 1/2	7	7	PC	Ha	Str	V	A-L	A-L	44	
45	Diamond T.....503	2600	168	186	5600	P 32x6	DP32x6	Her WXC	6-4 1/2 x 4 1/2	339	38.4	75-2400	L	L	L	L	13 1/2	7	7	PC	Ha	Str	V	A-L	A-L	45	
46	Diamond T.....506	2820	172	19																							

Line Number	Radiator Make	Clutch	Gear Set		Universal Make and No.	Rear Axle			Front Axle			Brakes		Frame		Body Mounting Data		Springs		Line Number																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
			Type and Make	Make and Model		Location	No. of Forward Speeds	Aux. Locat. and Speeds	Make and Model	Final Drive and Type	Drive and Torque	Gear Ratios	Make and Model	Service	Area Service Brakes	Hand	Steering Gear Make	Dim. Side Rail	Type		Cab to Rear of Frame	Cab to Rear Axle	Width of Frame	Front	Rear	Auxiliary Type																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											

Line Number	Make, Model and Capacity	General		Tire Size		Engine														Fuel System	Electrical System		Line Number				
		Chassis Price	Standard W.B.	Max. W.B. Furnished	Gross Vehicle Wt. (See Key Note)	Chassis Wt. (Stripped)	Front	Rear	Make and Model	Number of Cylinders Bore and Stroke	Piston Displacement	N.A.C.C. Rated H.P.	Max. Brake H.P. at Specified R.P.M.	Valve Arrangement	Camshaft Drive	Piston Material	Dia. Main Bearings	Length Main Bearings	No. Main Bearings	Oiling System	Governor Make	Carburetor Make		Fuel Feed	Ignition System Make	Generator, Starter Make	
3 Ton—Cont'd																											
1	Autocar 2 1/2-T. SCH	4300	157	203	19000	6860	P 34x7	DP34x7	Own	6-4 1/2 x 5 1/2	404.0	43.4	92-2400	L	G	C	3	14 1/2	7	FP	Ha	Str	V	D-R	L-N	1	
2	Available T-39, T-40V	Op	Op	Op	19000	7800	P 36x8	DP36x8	Wau KU	6-4 1/2 x 5 1/2	404.0	43.4	87-2500	L	G	C	3	13 1/2	7	FP	Wa	Zen	V	D-R	D-R	2	
3	Available T-34, T-44V	Op	Op	Op	19000	7950	P 36x8	DP36x8	Wau SRL	6-4 1/2 x 5 1/2	462.0	45.9	88-2200	L	G	C	3	13 1/2	7	FP	Wa	Zen	V	D-R	D-R	3	
4	Brockway.....KW	170	220	18000	6920	P 34x7	DP34x7	Wis	Con	6-4 1/2 x 5 1/2	377.0	38.4	72-2000	H	G	C	3	10 1/2	4	FP	KP	Zen	M	A-L	L-N	4	
5	Brockway.....190	168	204	19000	7025	P 34x7	DP34x7	Con	Con	6-4 1/2 x 5 1/2	380.9	40.8	89-2400	H	G	C	3	13 1/2	7	FP	KP	Zen	M	A-L	A-L	5	
6	Brockway.....195	170	224	19500	7250	P 34x7	DP34x7	Con	Con	6-4 1/2 x 5 1/2	358.0	38.4	89-2400	H	G	C	3	13 1/2	7	FP	KP	Zen	M	A-L	A-L	6	
7	Chicago.....1-26-A	2950	154	202	19000	5928	B 7.50/20	DB7.50/20	Wau GML	6-4 1/2 x 5 1/2	312.0	28.9	49-1900	L	G	C	3	10 1/2	3	FP	Co	Bu	Zen	V	Spl	D-R	8
8	Clinton.....65	184	Op	Op	14500	5925	S 34x5	DS34x5	Bud ETU	6-3 1/2 x 5	330.0	33.7	73-2400	L	G	C	3	9	4	FP	No	Str	V	Spl	D-R	7	
9	Clinton.....65-B	154	Op	Op	15175	5925	S 34x5	P 38x7	Bud DW 6	6-3 1/2 x 5	330.0	33.7	72-2600	L	G	C	3	9	4	FP	No	Str	V	D-R	D-R	10	
10	Coleman.....D-40	130	180	16600	8500	P 40x8	DP40x8	Bud DW 6	Bud DW 6	6-3 1/2 x 5	330.0	33.7	72-2600	L	G	C	3	9	4	FP	No	Str	V	A-L	A-L	11	
11	Commerce.....D-40	154	180	Op	15175	7100	P 36x6	DP38x7	Bud BA-6	6-4 1/2 x 5 1/2	410.0	40.8	73-2000	L	G	C	3	10 1/2	4	FP	No	Zen	V	A-L	A-L	12	
12	Concord.....JX-6	4200	154	174	17200	6700	P 34x7	DP34x7	Bud DW 6	6-3 1/2 x 5	330.0	33.7	73-2100	L	G	C	3	9	4	FP	No	Zen	V	A-L	A-L	13	
13	Corbitt 3-4 T. 18W6	178	230	18500	6530	P 34x7	DP34x7	Con 18R	Con 18R	6-4 1/2 x 5 1/2	340.0	38.4	82-2400	H	G	C	3	12 1/2	7	FP	Co	Zen	M	D-R	D-R	14	
14	Day Elder.....160	3695	156	204	16000	7500	P 36x8	DP36x8	Her YXC	6-4 1/2 x 5 1/2	428.4	45.9	92-2200	L	G	C	3	14 1/2	7	FP	Co	Zen	V	A-L	A-L	15	
15	Diamond T.....602	3440	169	231	19000	7500	P 36x8	DP36x8	Her YXC	6-4 1/2 x 5 1/2	428.4	45.9	94-2200	L	G	C	3	15	7	FP	Co	Ha	Zen	G	A-L	A-L	16
16	Diamond T.....606	3500	176	242	19000	7500	P 36x8	DP36x8	Own	6-3 1/2 x 5	309.6	31.5	96-3000	L	G	C	3	10 1/2	4	FP	Ha	Zen	V	A-L	A-L	17	
17	Dodge Bros.....F-60	2645	146	180	19000	5450	P 32x6	DP32x6	Own	6-3 1/2 x 5	309.6	31.5	96-3000	L	G	C	3	10 1/2	4	FP	Ha	Zen	V	A-L	A-L	18	
18	Dodge Bros.....F-61	2575	170	224	19000	5550	P 32x6	DP32x6	Own	6-3 1/2 x 5	309.6	31.5	96-3000	L	G	C	3	10 1/2	4	FP	Ha	Zen	V	A-L	A-L	19	
19	Dodge Bros.....F-62	2695	195	242	19000	5750	P 32x6	DP32x6	Own	6-3 1/2 x 5	309.6	31.5	96-3000	L	G	C	3	10 1/2	4	FP	Ha	Zen	V	A-L	A-L	20	
20	Douglas.....D-40	154	180	Op	20000	6500	S 36x5	S 36x10	Bud YBU-I	6-4 1/2 x 5 1/2	381.0	32.4	50-1400	L	G	C	2 1/2	9 1/2	3	FP	Bu	Zen	E	L-N	L-N	21	
21	Douglas.....D-40	154	180	Op	20000	6800	P 36x6	DP38x7	Bud BUS	6-4 1/2 x 5 1/2	361.0	33.4	78-2300	L	G	C	3	10 1/2	4	FP	Bu	Zen	E	L-N	L-N	22	
22	Douglas.....D-6	4430	186	Op	22000	7560	P 38x7	DP40x8	Bud BA6	6-4 1/2 x 5 1/2	411.0	40.8	83-2100	L	G	C	3	10 1/2	4	FP	No	Zen	V	A-L	A-L	23	
23	Duplex.....FAC	4250	166	18000	7200	P 34x5	S 36x8	Bud EBU-I	Bud EBU-I	6-4 1/2 x 5 1/2	312.0	28.9	57-2100	L	G	C	3 1/2	10 1/2	4	FP	No	Zen	V	A-L	A-L	24	
24	Duplex.....SAC	4750	166	18000	7400	P 34x5	S 36x8	Bud BA 6	Bud BA 6	6-4 1/2 x 5 1/2	411.0	40.8	78-2250	L	G	C	3 1/2	9 1/2	4	FP	No	Zen	V	A-L	A-L	25	
25	Fageol.....340	4750	182	200	15500	7820	P 36x6	DP36x6	Wau KU	6-4 1/2 x 5 1/2	404.0	38.4	87-2500	L	G	A	3	13 1/2	7	FP	Wa	Zen	V	D-R	D-R	26	
26	Fageol.....365	4200	182	200	15500	7250	P 36x6	DP36x6	Wau KU	6-4 1/2 x 5 1/2	404.0	38.4	87-2500	L	G	A	3	13 1/2	7	FP	Wa	Zen	V	D-R	D-R	27	
27	Fageol.....370	4200	182	200	15500	7250	P 36x6	DP36x6	Wau SRL	6-4 1/2 x 5 1/2	462.0	43.3	89-2200	L	G	C	3	13 1/2	7	FP	Wa	Zen	V	D-R	D-R	28	
28	Federal.....U-6-3-4	3860	155	218	19000	7220	P 34x7	DP34x7	Con 18R	6-4 1/2 x 5 1/2	339.0	38.4	82-2400	H	G	C	3	13 1/2	7	FP	KP	Zen	M	A-L	L-N	29	
29	Fisher-Stand. H. D. 6	155	206	18000	6200	P 34x7	DP34x7	Con 16R	Con 16R	6-4 1/2 x 5 1/2	331.0	38.4	73-2400	H	G	C	3	13 1/2	7	FP	Co	Zen	V	D-R	D-R	30	
30	Fisher-Stand. H. D. 6	155	206	18000	6200	P 34x7	DP34x7	Con 18R	Con 18R	6-4 1/2 x 5 1/2	339.0	38.4	81-2400	H	G	C	3	13 1/2	7	FP	Co	Bu	Zen	V	D-R	D-R	31
31	Freeman DW144	4900	144	186	13960	7560	P 34x7	DP34x7	Bud DW 6	6-3 1/2 x 5	330.0	33.7	73-2400	L	G	C	3	9	4	FP	Bu	Str	V	R-Bo	R-Bo	32	
32	Freeman DW186 3-1/4	5100	186	200	14000	7000	P 34x7	DP34x7	Bud DW 6	6-3 1/2 x 5	330.0	33.7	73-2400	L	G	C	3	9	4	FP	Bu	Str	V	R-Bo	R-Bo	33	
33	F.W.D.....2080	124	156	13960	6460	S 36x6	S 36x6	Own A	Own A	6-4 1/2 x 5 1/2	398.0	36.1	56-1350	L	G	C	2 1/2	12	4	FP	Pe	Str	V	Els	N-E	34	
34	Garford.....T44-1403	4030	141	181	14000	6005	P 36x6	DP36x6	Bud BA6	6-4 1/2 x 5 1/2	410.0	40.8	73-2000	L	G	C	3	10 1/2	4	FP	Pe	Str	V	Els	N-E	35	
35	Gen. Motors T44-1403	4030	141	181	14000	6005	P 36x6	DP36x6	Bud BA6	6-4 1/2 x 5 1/2	410.0	40.8	73-2000	L	G	C	3	10 1/2	4	FP	Pe	Str	V	Els	N-E	36	
36	Gotfredson.....RW54	103	194	15000	5700	P 36x4	S 36x8	Bud KBU-I	Bud KBU-I	6-4 1/2 x 5 1/2	263.0	28.9	43-1800	L	G	C	2 1/2	8 1/2	4	FP	Pe	Str	V	Els	N-E	37	
37	Gotfredson.....RW56	103	194	15000	5700	P 36x4	S 36x8	Bud KBU-I	Bud KBU-I	6-4 1/2 x 5 1/2	263.0	28.9	43-1800	L	G	C	2 1/2	8 1/2	4	FP	Pe	Str	V	Els	N-E	38	
38	Gotfredson.....RW56	103	194	15000	5700	P 36x4	S 36x8	Bud KBU-I	Bud KBU-I	6-4 1/2 x 5 1/2	263.0	28.9	43-1800	L	G	C	2 1/2	8 1/2	4	FP	Pe	Str	V	Els	N-E	39	
39	Gotfredson.....RW56A 3-4 T	103	194	15000	5700	P 34x7	DP34x7	Her YXC	Her YXC	6-4 1/2 x 5 1/2	428.4	45.9	94-2200	L	G	C	3	15	7	FP	Co	Str	M	D-R	D-R	40	
40	Gramm.....E-330	2595	160	196	13310	7500	P 34x7	DP34x7	Lyc TS	6-3 1/2 x 5	353.8	36.2	90-2200	L	G	A	3	10 1/2	4	FP	No	Zen	V	A-L	A-L	41	
41	Gramm.....EY-190	3535	190	190	13750	6750	P 32x6	DP32x6	Con 20-R	6-3 1/2 x 5	353.8	36.2	90-2200	L	G	A	3	10 1/2	4	FP	No	Zen	V	A-L	A-L	42	
42	Gramm.....EY-190	3535	190	190	13750	6750	P 32x6	DP32x6	Con 20-R	6-3 1/2 x 5	353.8	36.2	90-2200	L	G	A	3	10 1/2	4	FP	No	Zen	V	A-L	A-L	43	
43	Gramm.....38 Lowbed	3595	153	200	15200	7200	P 36x5	S 36x10	Lyc TS	6-3 1/2 x 5	353.8	36.2	90-2200	L	G	A	3	10 1/2	4	FP	Ha	Zen	M	A-L	A-L	44	
44	Gramm-Bernstein.....A	162	212	18500	7450	P 36x8	DP36x8																				

Line Number	Clutch	Gear Set	Rear Axle				Front Axle				Brakes				Frame				Body Mounting Data				Springs				Auxiliary Type	Line Number
			Type and Make	Location	No. of Forward Speeds	Aux. Locat. and Speeds	Universal Make and No.	Make and Model	Final Drive and Type	Drive and Torque	Gear Ratios	Reduce. in High	Reduce. in Low	Make and Model	Service	Area Service Brakes	Hand	Steering Gear Make	Dim. Side Rail	Type	Cab to Rear of Frame	Cab to Rear Axle	Width of Frame	Front	Rear			
1	Ow	dp.Lon	Ow T	U	4	Opt	Spl	Ow H	2F	H 6.95	44.0	Ow J	O21M	328	TD	Ros	7x2 1/2 x 1 1/2	C	133 1/2	74 1/2	34 1/2	41x2 1/2	53x3	1				
2	Y	D.B-L	B-L 51	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	2				
3	Y	D.B-L	B-L 60	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	3				
4	G&O	D.B-L	B-L	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	4				
5	Lon	P.B&B	B-L	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	5				
6	G&O	D.B-L	B-L	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	6				
7	Chi	D.B-L	B-L 35	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	7				
8	Per	D.B-L	B-L 55	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	8				
9	Per	D.B-L	B-L 55	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	9				
10	Per	D.Ful	Ful R U 16	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	10				
11	Lon	D.B-L	B-L 51	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	11				
12	Ow	D.B-L	B-L 51	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	12				
13	Per	D.B-L	B-L 55	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	13				
14	Per	D.B-L	B-L 51	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	14				
15	G&O	D.Cov	Cov	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	15				
16	G&O	D.Cov	Cov	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	16				
17	...	...	...	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	17	
18	...	...	...	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	18	
19	...	...	...	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	19	
20	Ow	D.Ful	Ful R U 16	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	20				
21	Ow	D.Ful	Ful HOG	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	21				
22	Ow	D.Ful	Ful HOG	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	22				
23	Mod	D.B-L	B-L 51	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	23				
24	Mod	D.B-L	B-L 55	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	24				
25	Ow	D.B-L	B-L 55	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	25				
26	Ow	D.B-L	B-L 51	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	26				
27	Per	D.B-L	B-L 55	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	27				
28	Lon	P.B&B	B-L 55	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	28				
29	Lon	D.B-L	B-L 51	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	29				
30	Lon	D.B-L	B-L 51	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	30				
31	Lon	D.Ful	Ful H U 16	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	31				
32	Lon	D.Ful	Ful H U 16	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	32				
33	McC	O-M-E	Cot DAF	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	33				
34	Lon	D.B-L	B-L 51	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	34				
35	Lon	D.Own	Mun	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	35				
36	McC	D.B-L	B-L 51-5	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	36				
37	Lon	D.B-L	B-L 51-5	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	37				
38	Lon	D.B-L	B-L 51-5	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	38				
39	...	...	...	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	39	
40	Per	D.Own	Cov W4C	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	40				
41	Per	D.Ful	Ful M U 14	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	41				
42	Ow	D.Ful	Ful H	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	42				
43	Ow	D.Ful	Ful M U 14	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	43				
44	Y	D.B-L	B-L 5012	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	44				
45	Y	D.B-L	B-L 5012	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	45				
46	Ow	D.Ful	Ful M U 14	U	4	No	Blo	Tim 65706	WF	R 8.5	50.5	Shu 5572	L41H	...	TD	Ros	7x2 1/2 x 1 1/2	C	132	74 1/2	34 1/2	41x2 1/2	53x3	46				
47	Ow	D.B-L	B-L 51																									

Line Number	Make, Model and Capacity	General		Tire Size		Engine										Fuel System		Electrical System		Line Number							
		Chassis Price	Standard W.B.	Max. W.B. Furnished	Gross Vehicle Wt. (See Key Note)	Chassis Wt. (Stripped)	Front	Rear	Make and Model	Number of Cylinders Bore and Stroke	Piston Displacement	N.A.C.C. Rated H.P.	Max. Brake H.P. at Specified R.P.M.	Valve Arrangement	Camshaft Drive	Piston Material	Dia. Main Bearings	Length Main Bearings	No. Main Bearings		Oiling System	Governor Make	Carburetor Make	Fuel Feed	Ignition System Make	Generator, Starter Make	
3½ Ton—Cont'd																											
1	Fisher-Standard Sup. 6	157	206	20000	6800	P 34x7	DP34x7	Con 18R	6-4x4½	339	38.4	81-2400	HCC	CC	CC	CC	13½	7	FP	Co	Zen	V	D-R	D-R	1		
2	Fisher-Standard Sup. 6	157	206	20000	7100	P 34x7	DP34x7	Con 18R	6-4x4½	339	38.4	81-2400	HCC	CC	CC	CC	13½	7	FP	Co	Zen	V	D-R	D-R	2		
3	Fisher-Standard Sup. 6	157	206	21000	7200	P 36x8	DP36x8	Con 21R	6-4x4½	427	54.9	102-2400	HCC	CC	CC	CC	13½	7	FP	Co	Zen	V	D-R	D-R	3		
4	Fisher-Standard Sup. 6	157	206	21000	7500	P 36x8	DP36x8	Con 21R	6-4x4½	427	54.9	102-2400	HCC	CC	CC	CC	13½	7	FP	Co	Zen	V	D-R	D-R	4		
5	Freeman BASP 3½-T	5500	144	144	16720	7760	P 38x9	DP38x9	Bud BA6	6-4x4½	358	40.8	91-2300	L	G	C	13½	7	FP	Co	Zen	V	D-R	D-R	5		
6	F.W.D. CU-6	5120	148	180	16720	7200	P 38x9	P 38x9	Wau SRS	6-4x4½	358	40.8	91-2300	L	G	C	13½	7	FP	Co	Zen	V	D-R	D-R	6		
7	Garford	80	5250	175	192	8200	S 36x12	Bud BA6	6-4x4½	411	40.8	85-2400	L	G	C	13½	7	FP	Co	Zen	V	D-R	D-R	7			
8	Gen. Motors T60-6202	3035	154	200	16500	6925	P 34x7	DP34x7	Bulck	6-3x5	331	43.7	94-2500	L	G	C	13½	7	FP	Co	Zen	V	D-R	D-R	8		
9	Gottfredson... RW64A	Op	160	180	...	...	S 36x5	S 36x10	Bud EBU-I	6-4x4½	312	0.32	48-1850	L	G	C	13½	7	FP	Co	Zen	V	D-R	D-R	9
10	Gottfredson... RW64A	Op	160	180	S 36x5	P 36x8	DP36x8	Own	6-4x4½	428	44.9	...	L	G	C	13½	7	FP	Co	Zen	V	D-R	D-R	10	
11	Gramm-Bernstein	30	120	168	...	6560	P 36x8	DP36x8	Con LA	6-4x4½	349	9.32	4	L	G	C	13½	7	FP	Co	Zen	V	D-R	D-R	11		
12	Hug	87	120	19030	...	6550	P 38x7	Bud DW6	6-3x5	330	0.33	70-2100	L	G	C	13½	7	FP	Co	Zen	V	D-R	D-R	12			
13	Hug	87M	120	21800	...	6550	P 38x7	Bud DW6	6-3x5	330	0.33	70-2100	L	G	C	13½	7	FP	Co	Zen	V	D-R	D-R	13			
14	Indiana	195	170	224	19500	7500	P 36x8	DP36x8	Con	6-4x4½	380	40.8	89-2400	HCC	CC	CC	13½	7	FP	Co	Zen	V	D-R	D-R	14		
15	Int. Harv'tr... HS-74	160	235	27000	9690	S 36x6	S 40x12	Has 152	6-4x4½	390	0.36	160-1800	HCC	CC	CC	13½	7	FP	Co	Zen	V	D-R	D-R	15			
16	Int. Harvester... W-3	160	235	26425	10125	S 36x6	S 40x12	Has 152	6-4x4½	390	0.36	160-1800	HCC	CC	CC	13½	7	FP	Co	Zen	V	D-R	D-R	16			
17	Int. Harv'tr... HS-74C	160	235	27400	10290	S 36x6	S 40x12	Has 152	6-4x4½	390	0.36	160-1800	HCC	CC	CC	13½	7	FP	Co	Zen	V	D-R	D-R	17			
18	Kenworth	205	5850	172	223	20500	7700	P 36x8	DP36x8	Bud GL6	6-4x4½	572	54.8	114-1900	L	G	C	13½	7	FP	Co	Zen	V	D-R	D-R	18	
19	Kenworth	220	5200	192	221	22000	8400	P 36x8	DP36x8	Has 160	6-4x4½	468	24.3	105-2000	L	G	C	13½	7	FP	Co	Zen	V	D-R	D-R	19	
20	La France-Republic L-1	180	200	18000	6900	P 36x8	DP36x8	Lyc TS	6-3x5	353	0.36	90-2750	L	G	C	13½	7	FP	Co	Zen	V	D-R	D-R	20			
21	La France-Republic M-1	171	191	20000	6900	P 36x8	DP36x8	Wau 6KS	6-4x4½	358	0.38	77-2500	L	G	C	13½	7	FP	Co	Zen	V	D-R	D-R	21			
22	Larrabee 85	4280	166	204	18400	7800	P 36x8	DP36x8	Wau 6XK	6-4x4½	339	38.4	82-2400	L	G	C	13½	7	FP	Co	Zen	V	D-R	D-R	22		
23	Moreland	37	3520	182	180	15000	6000	P 34x7	DP34x7	Con 18R	6-4x4½	339	38.4	82-2400	L	G	C	13½	7	FP	Co	Zen	V	D-R	D-R	23	
24	Pierce-Arrow	60DC	4745	175	192	7800	P 38x7	DP40x8	Own	6-4x4½	410	40.8	83-2000	L	G	C	13½	7	FP	Co	Zen	V	D-R	D-R	24		
25	Relay	80	5330	175	192	8600	P 36x6	Bud BA 6	6-4x4½	411	40.8	83-2000	L	G	C	13½	7	FP	Co	Zen	V	D-R	D-R	25			
26	Service	80	5250	175	192	8200	S 36x6	Bud BA 6	6-4x4½	411	40.8	83-2000	L	G	C	13½	7	FP	Co	Zen	V	D-R	D-R	26			
27	Ster. DW15-64.3½-T	40	163	177	15000	5775	S 36x5	S 36x8	Wau 6XK	6-3x4	298	0.33	66-2400	L	G	C	13½	7	FP	Co	Zen	V	D-R	D-R	27		
28	Sterling	19X	3690	165	235	7010	S 36x5	Lyc TS	6-3x5	354	0.36	90-2750	L	G	C	13½	7	FP	Co	Zen	V	D-R	D-R	28			
29	Studebaker	99	3795	184	14000	5400	B 7.50/20	DB 7.50/20	Own	6-4x4½	337	0.32	115-3200	L	G	C	13½	7	FP	Co	Zen	V	D-R	D-R	29		
30	Walter	6300	Op	118	20000	8000	B 9.00/24	DB 9.00/24	Own 6	6-4x4½	404	0.43	80-1800	L	G	C	13½	7	FP	Co	Zen	V	D-R	D-R	30		
31	Ward La France 30B	197	209	16000	7800	B 8.25/20	DB 8.25/20	Own	6-4x4½	337	0.32	115-3200	L	G	C	13½	7	FP	Co	Zen	V	D-R	D-R	31			
32	Ward La France 30RU	197	209	16000	7800	B 8.25/20	DB 8.25/20	Own	6-4x4½	337	0.32	115-3200	L	G	C	13½	7	FP	Co	Zen	V	D-R	D-R	32			
33	White	55	4650	174	215	8737	S 36x5	DS40x5	Own GRB	6-4x4½	326	3.28	56-1800	L	G	C	13½	7	FP	Co	Zen	V	D-R	D-R	33		
34	White 63 2½-3½-T	5000	168	188	8350	P 34x7	DP34x7	Own 3A	6-4x4½	396	0.38	75-2000	L	G	C	13½	7	FP	Co	Zen	V	D-R	D-R	34			
35	Wichita	6-90	4925	165	Op	7500	P 34x7	DP36x8	Wau 6SRL	6-4x4½	462	45.9	88-2000	L	G	C	13½	7	FP	Co	Zen	V	D-R	D-R	35		
36	Witt-Will	R3B	156	156	15500	6800	P 34x7	DP34x7	Con 18R	6-4x4½	339	38.4	82-2400	HCC	CC	CC	13½	7	FP	Co	Zen	V	D-R	D-R	36		
37	Witt-Will	R3B	156	156	15500	6800	P 34x7	DP34x7	Con 18R	6-4x4½	339	38.4	82-2400	HCC	CC	CC	13½	7	FP	Co	Zen	V	D-R	D-R	37		
38	Witt-Will	R3B	156	156	15500	6800	P 34x7	DP34x7	Con 18R	6-4x4½	339	38.4	82-2400	HCC	CC	CC	13½	7	FP	Co	Zen	V	D-R	D-R	38		
39	Witt-Will	R3B	156	156	15500	6800	P 34x7	DP34x7	Con 18R	6-4x4½	339	38.4	82-2400	HCC	CC	CC	13½	7	FP	Co	Zen	V	D-R	D-R	39		
4 Ton																											
40	Armleder	41	3000	Op	199	16300	6500	P 34x7	DP34x7	Her WXC	6-4x4½	339	38.4	73-2000	L	G	C	13½	7	FP	Co	Zen	V	D-R	D-R	40	
41	Atterbury	4750	186	220	19315	8300	P 36x8	DP36x8	Con 20R	6-4x4½	381	40.8	82-2400	L	G	C	13½	7	FP	Co	Zen	V	D-R	D-R	41		
42	Available	T-50	160	220	22000	9300	P 40x8	DP40x8	Wau 6AB	6-4x4½	449	48.6	100-2000	L	G	C	13½	7	FP	Co	Zen	V	D-R	D-R	42		
43	Brookway	R	164	191	20000	7800	S 36x5	S 36x12	Con	6-4x4½	350	32.4	42-...	L	G	C	13½	7	FP	Co	Zen	V	D-R	D-R	43		
44	Brookway	RT	175	200	20000	8100	S 36x5	S 36x12	Con	6-4x4½	471	40.0	52-...	L	G	C	13½	7	FP	Co	Zen	V	D-R	D-R	44		
45	Brookway	R2	170	224	22000	8200	P 40x8	DP40x8	Con	6-4x4½	427	54.9	100-2400	L	G	C	13½	7	FP	Co	Zen	V	D-R	D-R	45		
46	Chicago	1-30-A	3500	154	202	6216	B 9.00/20	DB 9.00/20	Wau 6ML	6-4x4½	358	38.4	77-2400	L	G	C	13½	7	FP	Co	Zen	V	D-R	D-R	46		
47	Clinton	90M	190	Op	15550	8000	S 36x5	DP36x6	Bud YTU	6-4x4½	381	40.8	50-1400	L	G	C	13½	7	FP	Co	Zen	V	D-R	D-R	47		
48	Clinton	90M	190	Op	15550	8000	S 36x5	DP36x6	Bud YTU	6-4x4½	381	40.8	50-1400	L	G	C	13½	7	FP	Co	Zen	V	D-R	D-R	48		
49	Commerce	80	5330	175	192	8400	S 36x6	S 36x14	Bud BA 6	6-4x4½	411	40.8	83-2000	L	G	C	13½	7	FP	Co	Zen						

Line Number	Radiator Make	Clutch		Gear Set		Universal Make and No.	Rear Axle		Front Axle		Brakes		Frame		Body Mounting Data		Springs		Auxiliary Type	Line Number							
		Type and Make	Make and Model	Location	No. of Forward Speeds		Aux. Locat. and Speeds	Make and Model	Final Drive and Type	Drive and Torque	Gear Ratios	Reduce. in High	Reduce. in Low	Make and Model	Service	Area Service Brakes	Hand	Steering Gear Make			Dim. Side Rail	Type	Cap to Rear of Frame	Cap to Rear Axle	Width of Frame	Front	Rear
1	Lon	D-B-L	B-L 55	A	7	No	Blo 4	Tim 58200H	SF	R 7.8	74.2	Tim 15733H	L4IHV	660	TD	Ros	7 1/2 x 2 1/2 x 3/4	C	144	79 1/2	32	43x2 1/2	54x3	1			
2	Lon	D-B-L	B-L 55	A	7	No	Blo 4	Tim 58200H	SF	R 7.8	74.2	Tim 15733H	L4IHV	660	TD	Ros	7 1/2 x 2 1/2 x 3/4	C	144	79 1/2	32	43x2 1/2	54x3	2			
3	Lon	D-B-L	B-L 55	A	7	No	Blo 4	Tim 58200H	SF	R 7.8	74.2	Tim 15733H	L4IHV	660	TD	Ros	7 1/2 x 2 1/2 x 3/4	C	144	79 1/2	32	43x2 1/2	54x3	3			
4	Lon	D-B-L	B-L 55	A	7	No	Blo 4	Tim 58200H	SF	R 7.8	74.2	Tim 15733H	L4IHV	660	TD	Ros	7 1/2 x 2 1/2 x 3/4	C	144	79 1/2	32	43x2 1/2	54x3	4			
5	Lon	D-Ful	Ful H U 16	A	8	A 2	BC	Ow	I	R 8.53	155	Ow	O4XIM	336	RX	Woh	7 1/2 x 2 1/2 x 3/4	C	100	72 1/2	32	54x3	52 1/2 x 2 1/2	5			
6	Per	O-H-S	Ow	A	5	Op	Blo	Ow U	BF	R 8.9	88.6	Ow U	O4XIM	252	21	Jac	7 1/2 x 2 1/2 x 3/4	C	132	93	36	42 1/2 x 2 1/2	54x3	6			
7	Lon	D-Ow	B-L 60 Max	A	7	No	Blo	Tim 66700DP	WF	R 10.3	98.2	Tim 16302	B4IM	687	TX	Jac	9 1/2 x 3 1/2 x 3/4	P	144	94 1/2	34	40x3	54x3	7			
8	Lon	D	Mun	A	7	No	Spl	Tim 65706	WF	R 8.5	52.5	Eat 527F	B4IM	687	TX	Jac	9 1/2 x 3 1/2 x 3/4	P	125	69 1/2	34	40x3	54x3	8			
9	McC	D-B-L	B-L 55 Max	A	7	No	Spl	Tim 65706H	WF	R 8.5	52.5	Eat 527F	B4IM	687	TX	Jac	9 1/2 x 3 1/2 x 3/4	P	125	69 1/2	34	40x3	54x3	9			
10	Lon	D-B-L	B-L 55-7	A	7	No	Blo	Tim 65706H	WF	R 8.5	52.5	Eat 527F	B4IM	687	TX	Jac	9 1/2 x 3 1/2 x 3/4	P	125	69 1/2	34	40x3	54x3	10			
11	You	D-Ful	Ful G7	A	8	A 2	BC	Ow	I	R 8.53	155	Ow	O4XIM	336	RX	Woh	7 1/2 x 2 1/2 x 3/4	C	100	72 1/2	32	54x3	52 1/2 x 2 1/2	11			
12	Lon	D-B-L	B-L 51	A	7	No	Blo 3	Wls 1227	2F	R 8.64	51.5	Shu 610	W2IM	614	CD	Ros	7 1/2 x 2 1/2 x 3/4	I	130	81 1/2	34	41 1/2 x 2 1/2	54 1/2 x 3	12			
13	You	D-B-L	B-L 55	A	7	No	Blo 3	Wls 1227	2F	R 8.64	51.5	Shu 610	W2IM	614	CD	Ros	7 1/2 x 2 1/2 x 3/4	I	130	81 1/2	34	41 1/2 x 2 1/2	54 1/2 x 3	13			
14	G&O	D-B-L	B-L	U	4	No	Spl 3	Wls	2F	R 6.8	81.2	Shu	L4IHV	614	CD	Ros	8 1/2 x 3 1/2 x 3/4	T	142	84	34	40x2 1/2	54x3	14			
15	Ow	P-Ow	Ow	U	5	No	Ow	Eat 74	2F	R 7.85	70.5	Eat 74F	BE4IM	850	41	Ow	8 1/2 x 3 1/2 x 3/4	T	120	81 1/2	34	44x3	58x4	15			
16	Ow	P-Ow	Ow	U	5	No	Ow	Eat 78	2F	R 7.85	70.5	Eat 74F	BE4IM	794	21	Ow	8 1/2 x 3 1/2 x 3/4	T	120	81 1/2	34	44x3	58x4	16			
17	Ow	P-Ow	Ow	U	5	No	Ow	Eat 78	2F	R 7.85	70.5	Eat 74F	BE4IM	794	21	Ow	8 1/2 x 3 1/2 x 3/4	T	120	81 1/2	34	44x3	58x4	17			
18	Per	D-B-L	B-L 60	U	4	A 3	Spl 4	Tim 65706H	WF	R 8.8	79.1	Eat 74F	B4IM	736	41	Ow	8 1/2 x 3 1/2 x 3/4	T	132	81 1/2	34	44x3	54x4	18			
19	Per	D-B-L	B-L	U	4	A 3	Spl 6	Tim 65706H	WF	R 8.8	79.1	Eat 74F	B4IM	736	41	Ow	8 1/2 x 3 1/2 x 3/4	T	132	81 1/2	34	44x3	54x4	19			
20	Ow	D-Ful	Ful	U	4	No	S-P	Tim 65706H	WF	R 8.8	79.1	Eat 74F	B4IM	736	41	Ow	8 1/2 x 3 1/2 x 3/4	T	132	81 1/2	34	44x3	54x4	20			
21	Ow	D-Ful	Ful VUOG	U	5	No	S-P	Tim 65706H	WF	R 8.8	79.1	Eat 74F	B4IM	736	41	Ow	8 1/2 x 3 1/2 x 3/4	T	132	81 1/2	34	44x3	54x4	21			
22	Per	D-B-L	B-L 51	U	4	A 4	Pet	Tim 65200D	WF	R 7.7	40.0	Tim 15733H	L4IHV	650	TD	Ros	8 1/2 x 3 1/2 x 3/4	C	139 1/2	89 1/2	34	40x2 1/2	54x3	22			
23	Lon	D-Ow	B-L 51	U	4	A 4	Pet	Tim 65200D	WF	R 7.7	40.0	Tim 15733H	L4IHV	650	TD	Ros	8 1/2 x 3 1/2 x 3/4	C	139 1/2	89 1/2	34	40x2 1/2	54x3	23			
24	G&O	D-Ow	B-L 55	U	4	A 4	Pet	Tim 65200D	WF	R 7.7	40.0	Tim 15733H	L4IHV	650	TD	Ros	8 1/2 x 3 1/2 x 3/4	C	139 1/2	89 1/2	34	40x2 1/2	54x3	24			
25	Lon	D-Ful	Ful H U 16	A	8	A 2	BC	Ow	I	R 8.53	155	Ow	O4XIM	336	RX	Woh	7 1/2 x 2 1/2 x 3/4	C	100	72 1/2	32	54x3	52 1/2 x 2 1/2	25			
26	Lon	D-Ful	Ful H U 16	A	8	A 2	BC	Ow	I	R 8.53	155	Ow	O4XIM	336	RX	Woh	7 1/2 x 2 1/2 x 3/4	C	100	72 1/2	32	54x3	52 1/2 x 2 1/2	26			
27	Lon	D-Ful	Ful H U 16	A	8	A 2	BC	Ow	I	R 8.53	155	Ow	O4XIM	336	RX	Woh	7 1/2 x 2 1/2 x 3/4	C	100	72 1/2	32	54x3	52 1/2 x 2 1/2	27			
28	Hex	D-B-L	B-L 51	U	4	Op	Spl 3	Tim 65000H	WF	R 8.5	45.5	Tim 15733H	L4IHV	387	TX	Ros	7 1/2 x 2 1/2 x 3/4	C	149 1/2	85 1/2	34	48x3	54x3	28			
29	Hex	D-B-L	B-L 51	U	4	Op	Spl 3	Tim 65000H	WF	R 8.5	45.5	Tim 15733H	L4IHV	387	TX	Ros	7 1/2 x 2 1/2 x 3/4	C	149 1/2	85 1/2	34	48x3	54x3	29			
30	Mod	D-Ful	Ful	U	12	A 12	Spl 3	Tim	WF	R 7.5	127	Sal	B4IM	398	TX	Han	6 1/2 x 2 1/2 x 3/4	C	122 1/2	72 1/2	33 1/2	40x3	56x3	30			
31	Lon	D-Ful	Ful	U	12	A 12	Spl 3	Tim	WF	R 7.5	127	Sal	B4IM	398	TX	Han	6 1/2 x 2 1/2 x 3/4	C	122 1/2	72 1/2	33 1/2	40x3	56x3	31			
32	Ow	Ow	Ow	U	5	No	Ow	Ow	WF	R 8.5	85	Ow	O4XIM	600	FX	Ros	8 1/2 x 3 1/2 x 3/4	C	108	78	34	39x2 1/2	56 1/2 x 3	32			
33	Ow	P-B-L	B-L	U	4	Opt	Cle	Wls	2F	R 7.4	46	Tim 15733H	L4IHV	600	FX	Ros	8 1/2 x 3 1/2 x 3/4	C	108	78	34	39x2 1/2	56 1/2 x 3	33			
34	Ow	P-B-L	B-L	U	4	Opt	Cle	Wls	2F	R 7.4	46	Tim 15733H	L4IHV	600	FX	Ros	8 1/2 x 3 1/2 x 3/4	C	108	78	34	39x2 1/2	56 1/2 x 3	34			
35	Ow	P-B-L	B-L	U	4	Opt	Cle	Wls	2F	R 7.4	46	Tim 15733H	L4IHV	600	FX	Ros	8 1/2 x 3 1/2 x 3/4	C	108	78	34	39x2 1/2	56 1/2 x 3	35			
36	Ow	P-B-L	B-L	U	4	Opt	Cle	Wls	2F	R 7.4	46	Tim 15733H	L4IHV	600	FX	Ros	8 1/2 x 3 1/2 x 3/4	C	108	78	34	39x2 1/2	56 1/2 x 3	36			
37	You	D-B-L	B-L 60	U	4	No	S-P	Ow 10C	WF	R 6.05	73.6	Shu 610	O2IMV	342	RI	Ros	7 1/2 x 2 1/2 x 3/4	P	175 1/2	84 1/2	30	42x3	56x3	37			
38	Per	D-B-L	B-L 51	U	4	No	Spl	Tim 65001H	WF	R 8.3	36.5	Tim 15733H	L4IHV	554	FI	Ros	8 1/2 x 3 1/2 x 3/4	C	178 1/2	104 1/2	34	42x3	56x3 1/2	38			
39	Per	D-B-L	B-L 51	U	4	No	Spl	Tim 65001H	WF	R 8.3	36.5	Tim 15733H	L4IHV	554	FI	Ros	8 1/2 x 3 1/2 x 3/4	C	178 1/2	104 1/2	34	42x3	56x3 1/2	39			
40	Ow	D-Ful	Ful MG U	U	4	No	Spl	Tim 58000	2F	H 7.25	38.8	Shu 5572	L4IHV	500	TD	Ros	7 1/2 x 2 1/2 x 3/4	C	169 1/2	103 1/2	34	40x2 1/2	62 1/2 x 3	40			
41	You	D-B-L	B-L	U	4	No	Spl	Tim 65706D	WF	R 7.25	38.8	Shu 5572	L4IHV	500	TD	Ros	7 1/2 x 2 1/2 x 3/4	C	169 1/2	103 1/2	34	40x2 1/2	62 1/2 x 3	41			
42	You	D-B-L	B-L 60	U	4	No	Spl	Tim 65706D	WF	R 7.25	38.8	Shu 5572	L4IHV	500	TD	Ros	7 1/2 x 2 1/2 x 3/4	C	169 1/2	103 1/2	34	40x2 1/2	62 1/2 x 3	42			
43	Bus	D-B-L	B-L	U	4	No	Spl	Tim 65706D	WF	R 7.25	38.8	Shu 5572	L4IHV	500	TD	Ros	7 1/2 x 2 1/2 x 3/4	C	169 1/2	103 1/2	34	40x2 1/2	62 1/2 x 3	43			
44	Bus	D-B-L	B-L	U	4	No	Spl	Tim 65706D	WF	R 7.25	38.8	Shu 5572	L4IHV	500	TD	Ros	7 1/2 x 2 1/2 x 3/4	C	169 1/2	103 1/2	34	40x2 1/2	62 1/2 x 3	44			
45	G&O	D-B-L	B-L	U	4	No	Spl 3	Wls	2F	R 6.96	96	Shu	L4IHV	631	TD	Ros	8 1/2 x 3 1/2 x 3/4	T	142	84	34	40x2 1/2	54x3	45			
46	Chi	D-B-L	B-L 51	U	5	No	Spl 3	Tim 65																			

Line Number	Make, Model and Capacity	General				Tire Size		Make and Model	Engine										Fuel System		Electrical System		Line Number			
		Chassis Price	Standard W.B.	Max. W.B. Furnished	Gross Vehicle Wt. (See Key Note)	Chassis Wt. (Stripped)	Front		Rear	Number of Cylinders Bore and Stroke	Piston Displacement	N.A.C.C. Rated H.P.	Max. Brake H.P. at Specified R.P.M.	Valve Arrangement	Camshaft Drive	Piston Material	Dia. Main Bearings	Length Main Bearings	No. Main Bearings	Oiling System	Governor Make	Carburetor Make		Fuel Feed	Ignition System Make	Generator, Starter Make
5 Ton—Cont'd																										
1	Diamond T.....1000	4420	171	201	28000	9700	S 36x6	S 40x12	Her YXC2	6-4 1/2 x 4 1/2	453	48.6	100-2200	L	L	L	3 1/2	15 1/2	7	7	PC	Ha	Zen	A-L	A-L	1
2	Douglas.....F4	5525	185	Op	26000	9200	S 36x6	S 40x12	Bud BBU	4-5 1/2 x 6 1/2	510.5	40.0	61-1400	L	L	L	3 1/2	12 1/2	7	7	PC	Bu	Zen	A-L	A-L	2
3	Douglas.....F6	6300	196	Op	26000	9200	S 36x6	S 40x12	Bud GL6	6-4 1/2 x 6 1/2	572.5	48.6	105-2200	L	L	L	3 1/2	10 1/2	7	7	PC	Bu	Zen	A-L	A-L	3
4	Duplex.....M 5-7 Ton	7650	Op	Op	29000	10000	P 36x8	DP36x7	Con 21R	6-4 1/2 x 4 1/2	427.5	45.9	102-2400	H	G	C	3 1/2	13 1/2	7	7	PC	Co	Str	A-L	A-L	4
5	Fisher-Standard.....100C	5900	156	186	25000	8490	P 36x8	DP36x8	Bud BA6	6-4 1/2 x 5 1/2	411	40.8	83-2000	L	G	C	3 1/2	9 1/2	4	4	PC	Bu	Str	R-Bo	R-Bo	5
6	Freeman.....BA-156	5900	156	186	25000	8490	P 36x8	DP36x8	Bud BA6	6-4 1/2 x 5 1/2	411	40.8	83-2000	L	G	C	3 1/2	9 1/2	4	4	PC	Bu	Str	R-Bo	R-Bo	6
7	Freeman.....BA-186	6000	186	186	25000	8550	P 36x8	DP36x8	Bud BA6	6-4 1/2 x 5 1/2	411	40.8	83-2000	L	G	C	3 1/2	9 1/2	4	4	PC	Bu	Str	R-Bo	R-Bo	7
8	F.W.D.....M5	165	Op	Op	13000	D44x10	DP44x10	Wau RB	6-5 1/2 x 5 1/2	677	60	127-2000	L	L	L	3 1/2	11 1/2	7	7	PC	Wau	Str	Els	Els	8	
9	Garford.....100	5830	175	192	26000	9600	S 36x6	S 40x14	Bud BA6	6-4 1/2 x 5 1/2	411	40.8	83-2000	L	G	C	3 1/2	9 1/2	4	4	PC	Bu	Str	R-Bo	R-Bo	9
10	Gen Motors T90-9001	5885	185	220	23000	9400	B 7.50/20	DP7.50/20	Bud BA6	6-4 1/2 x 5 1/2	411	40.8	83-2000	L	G	C	3 1/2	9 1/2	4	4	PC	Bu	Str	R-Bo	R-Bo	10
11	Gotfredson.....RW-86A	5885	185	220	23000	9400	B 7.50/20	DP7.50/20	Bud BA6	6-4 1/2 x 5 1/2	411	40.8	83-2000	L	G	C	3 1/2	9 1/2	4	4	PC	Bu	Str	R-Bo	R-Bo	11
12	Gramm.....HY-236	6545	236	236	22600	9600	P 36x8	DP36x8	Her YXC3	6-4 1/2 x 4 1/2	331	45.9	102-2400	H	G	C	3 1/2	13 1/2	7	7	PC	Ha	Str	A-L	A-L	12
13	Gramm.....60	4745	153	200	20700	8700	S 36x6	S 36x14	Her G	6-4 1/2 x 5 1/2	407.6	36.1	85-2200	L	L	L	3 1/2	10 1/2	7	7	PC	Pe	Str	A-L	A-L	13
14	Gramm.....60	4745	153	200	20700	8700	S 36x6	S 36x14	Lyc TS	6-3 3/4 x 5 1/2	353.8	32.6	85-2200	L	L	L	3 1/2	10 1/2	7	7	PC	Pe	Str	A-L	A-L	14
15	Gramm-Bernstein.....40	156	176	Op	23500	8360	S 36x6	DS36x5	Con LA	6-4 1/2 x 5 1/2	427	45.9	102-2400	H	G	C	3 1/2	13 1/2	7	7	PC	Ha	Str	A-L	A-L	15
16	Gramm-Bernstein.....HV	162	212	Op	23500	8360	S 36x6	DS36x5	Con 21R	6-4 1/2 x 5 1/2	427	45.9	102-2400	H	G	C	3 1/2	13 1/2	7	7	PC	Ha	Str	A-L	A-L	16
17	Hahn.....67H	164	184	Op	23500	8900	P 36x8	DP36x8	Con 21H	6-4 1/2 x 4 1/2	427	45.9	102-2400	H	G	C	3 1/2	13 1/2	7	7	PC	Ha	Str	A-L	A-L	17
18	Hahn.....67H	164	184	Op	23500	8900	P 36x8	DP36x8	Bud BA6	6-4 1/2 x 4 1/2	427	45.9	102-2400	H	G	C	3 1/2	13 1/2	7	7	PC	Ha	Str	A-L	A-L	18
19	Hug.....97	135	Op	Op	10000	P 36x8	DP36x8	Bud BA6	6-4 1/2 x 4 1/2	427	45.9	102-2400	H	G	C	3 1/2	13 1/2	7	7	PC	Ha	Str	A-L	A-L	19	
20	Indiana.....250	182	224	Op	25000	10000	P 40x8	DP40x8	Con	6-4 1/2 x 4 1/2	427	45.9	102-2400	H	G	C	3 1/2	13 1/2	7	7	PC	Ha	Str	A-L	A-L	20
21	Int. Harv'tr HS-104C	5400	162	198	19000	6500	B 9.00/20	DB9.00/20	Her WXC2	6-4 1/2 x 4 1/2	360.8	40.8	80-2200	L	G	C	3 1/2	13 1/2	7	7	PC	Mo	Str	A-L	A-L	21
22	Kleiber.....T	5775	148	188	26000	9200	P 40x8	DP40x8	Her YXC2	6-4 1/2 x 4 1/2	453	48.6	99-2200	L	G	C	3 1/2	15 1/2	7	7	PC	Pe	Str	A-L	A-L	22
23	W.D.....T	5775	148	188	26000	9200	P 40x8	DP40x8	Bud BA6	6-4 1/2 x 4 1/2	453	48.6	99-2200	L	G	C	3 1/2	15 1/2	7	7	PC	Pe	Str	A-L	A-L	23
24	Maccar.....86	177	209	Op	22900	8200	S 36x6	DS36x6	Bud BA6	6-4 1/2 x 4 1/2	411	40.8	75-2200	L	G	C	3 1/2	9 1/2	4	4	PC	Pe	Str	A-L	A-L	24
25	Maccar.....86A	170	216	Op	25000	9500	B 10.50/22	B10.50/22	Her YXC3	6-4 1/2 x 4 1/2	478.8	51.2	106-2400	L	L	L	3 1/2	15 1/2	7	7	PC	Pe	Str	A-L	A-L	25
26	Maccar.....G1	186	204	Op	25000	9500	B 10.50/22	B10.50/22	Wls RBU	4-5 1/2 x 6 1/2	414	40.0	100-2300	L	L	L	3 1/2	12 1/2	7	7	PC	Pe	Str	A-L	A-L	26
27	Mack BC 3 1/2-5 Ton	5500	154	190	22000	8200	S 36x6	DS36x5	Ownc AC	6-4 1/2 x 5 1/2	427	45.9	102-2400	H	G	C	3 1/2	13 1/2	7	7	PC	Ha	Str	A-L	A-L	27
28	Mack BJ 3 1/2-5 Ton	6150	169	240	22000	8200	S 36x6	DS36x5	Ownc AC	6-4 1/2 x 5 1/2	427	45.9	102-2400	H	G	C	3 1/2	13 1/2	7	7	PC	Ha	Str	A-L	A-L	28
29	Mack AK 3 1/2-5 Ton	5150	162	228	22000	8200	S 36x6	DS36x5	Ownc AC	6-4 1/2 x 5 1/2	427	45.9	102-2400	H	G	C	3 1/2	13 1/2	7	7	PC	Ha	Str	A-L	A-L	29
30	Mack AK 3 1/2-5 Ton	5250	162	228	22000	8200	S 36x6	DS36x5	Ownc AC	6-4 1/2 x 5 1/2	427	45.9	102-2400	H	G	C	3 1/2	13 1/2	7	7	PC	Ha	Str	A-L	A-L	30
31	Mack AC 3 1/2-5 Ton	4950	156	240	22000	8200	S 36x6	DS40x5	Ownc AC	6-4 1/2 x 5 1/2	471.2	40.0	77-1800	L	G	C	3 1/2	10 1/2	3	3	PC	On	Str	V	R-Bo	31
32	Moreland.....EX-7	4325	182	Op	19000	6500	B 9.00/20	DB9.00/20	Her WXC2	6-4 1/2 x 4 1/2	360.8	40.8	80-2200	L	G	C	3 1/2	13 1/2	7	7	PC	Mo	Str	A-L	A-L	32
33	Pierce-Arrow.....RD	5400	162	198	19000	6500	B 9.00/20	DB9.00/20	Her WXC2	6-4 1/2 x 4 1/2	360.8	40.8	80-2200	L	G	C	3 1/2	13 1/2	7	7	PC	Mo	Str	A-L	A-L	33
34	Relay.....100AC	6615	226	Op	24000	9600	P 36x8	DP36x8	Con 21R	6-4 1/2 x 4 1/2	427	45.9	102-2400	H	G	C	3 1/2	13 1/2	7	7	PC	Ha	Str	A-L	A-L	34
35	Schacht De Luxe.....40	174	199	Op	22000	7500	P 36x8	DP36x8	Her WXC2	6-4 1/2 x 4 1/2	360.8	40.8	80-2200	L	G	C	3 1/2	13 1/2	7	7	PC	Mo	Str	A-L	A-L	35
36	Selden.....67C	164	184	Op	23500	8700	P 36x8	DP36x8	Con 21R	6-4 1/2 x 4 1/2	427	45.9	102-2400	H	G	C	3 1/2	13 1/2	7	7	PC	Ha	Str	A-L	A-L	36
37	Service.....100	5830	175	192	26000	9600	S 36x6	S 40x14	Bud BA6	6-4 1/2 x 5 1/2	411	40.8	83-2000	L	G	C	3 1/2	9 1/2	4	4	PC	Bu	Str	A-L	A-L	37
38	Stewart.....31X	4990	165	235	26000	8400	S 36x6	DS36x6	Wau GSRL	6-4 1/2 x 5 1/2	462	45.9	100-1800	L	G	C	3 1/2	10 1/2	4	4	PC	Wau	Str	A-L	A-L	38
39	Walter.....FHS	7600	Op	Op	24000	9600	S 36x6	DS40x7	Wau	6-4 1/2 x 5 1/2	462	45.9	100-1800	L	G	C	3 1/2	10 1/2	4	4	PC	Wau	Str	A-L	A-L	39
40	Ward La France.....50C	Op	Op	Op	24000	9600	S 36x6	DS40x7	Wau	6-4 1/2 x 5 1/2	462	45.9	97-2000	L	G	C	3 1/2	11 1/2	4	4	PC	Wau	Str	A-L	A-L	40
41	Ward La France.....586	Op	Op	Op	24000	9600	S 36x6	DS40x7	Wau	6-4 1/2 x 5 1/2	462	45.9	97-2000	L	G	C	3 1/2	11 1/2	4	4	PC	Wau	Str	A-L	A-L	41
42	White.....52	5100	174	245	24000	9184	S 36x6	S 40x12	Ownc GRB	6-4 1/2 x 5 1/2	326.3	28.9	56-1800	L	G	C	3 1/2	11 1/2	3	3	PC	Wau	Str	A-L	A-L	42
43	White.....55	4765	174	215	23000	8737	S 36x6	DS40x6	Ownc GRB	6-4 1/2 x 5 1/2	326.3	28.9	56-1800	L	G	C	3 1/2	11 1/2	3	3	PC	Wau	Str	A-L	A-L	43
44	White 64.....3 1/2 to 5 T	6300	180	2																						

Line Number	Radiator Make	Clutch	Type and Make	Gear Set	Make and Model	Location	No. of Forward Speeds	Aux. Locat. and Speeds	Universals Make and No.	Rear Axle			Front Axle			Brakes			Frame			Body Mounting Data			Springs			Auxiliary Type	Line Number
										Make and Model	Final Drive and Type	Drive and Torque	Gear Ratios	Make and Model	Service	Area Service Brakes	Hand	Steering Gear Make	Dim. Side Rail	Type	Cab to Rear of Frame	Cab to Rear Axle	Width of Frame	Front	Rear	Front	Rear		
1	G&O	D.Cov	B-L	A	4	No	Spl 4	Tim68700DH	WF	R	10.0	54.4	Tim 17300	T21HV	572	TD	Ros	9x3 1/2 x 1/4	P	140 1/4	90 1/4	37	46x3	56x4	54x4	54x4	54x4	54x4	1
2	Ow	D.Ful	B-L	A	4	No	Spl 5	Wls 1458	2F	R	10.0	54.4	Shu 615	W21MV	503	CX	Ros	10x2 1/2 x 1/4	T	156 1/4	130 1/4	36	45x3	54x4	54x4	54x4	54x4	54x4	2
3	Ow	D.Ful	B-L	A	4	No	Spl 5	Wls 1567	2F	R	10.0	54.4	Shu 650	W21MV	538	CX	Ros	10x2 1/2 x 1/4	T	156 1/4	130 1/4	36	48x3	54x4	54x4	54x4	54x4	54x4	3
4	Mod	D.B-L	B-L	A	7	No	Cle	Tim 68700	WF	R	8.75	83.2	Tim 16700TW	T21A	920	TD	Ros	9 1/2 x 3 1/2 x 1/4	T	200 1/4	124 1/4	38	42x3	56x4	54x4	54x4	54x4	54x4	4
5	Lon	D.B-L	B-L	A	7	No	Cle	Tim 66702W	WF	R	8.53	155	Ow	B41VM	528	T4	Woh	10x3x1/4	C	156 1/4	114 1/4	34	48x3 1/2	52x4	52x4	52x4	52x4	52x4	5
6	Lon	D.Ful	B-L	A	7	No	Cle	Ow	2F	R	10.0	195.0	Tim 16302	B41VM	528	T4	Woh	10x3x1/4	C	156 1/4	114 1/4	34	48x3 1/2	52x4	52x4	52x4	52x4	52x4	6
7	Lon	D.Ful	B-L	A	7	No	Cle	Tim 68700DP	WF	R	9.25	76.7	Eat 527-F	B41VM	528	T4	Woh	10x3x1/4	C	156 1/4	114 1/4	34	48x3 1/2	52x4	52x4	52x4	52x4	52x4	7
8	Lon	D.Ful	B-L	A	7	No	Cle	Tim 66704DHP	WF	R	8.53	155	Tim 16710H	B41VM	528	T4	Woh	10x3x1/4	C	156 1/4	114 1/4	34	48x3 1/2	52x4	52x4	52x4	52x4	52x4	8
9	Lon	D.Ful	B-L	A	7	No	Cle	Wt 12527KW	2F	R	10.0	207	Tim 1660	B41VM	528	T4	Woh	10x3x1/4	C	156 1/4	114 1/4	34	48x3 1/2	52x4	52x4	52x4	52x4	52x4	9
10	Lon	D.Ful	B-L	A	7	No	Cle	Wls 1700	2F	R	7.33	82.0	Wls 30	41A	21	TD	Ros	8 1/2 x 3 1/2 x 1/4	C	198 1/4	141 1/4	41 1/4	44x3	60x4	58x3 1/2	58x3 1/2	58x3 1/2	58x3 1/2	10
11	Lon	D.Ful	B-L	A	7	No	Cle	Wls 1700	2F	R	7.33	82.0	Wls 30	41A	21	TD	Ros	8 1/2 x 3 1/2 x 1/4	C	198 1/4	141 1/4	41 1/4	44x3	60x4	58x3 1/2	58x3 1/2	58x3 1/2	58x3 1/2	11
12	Lon	D.Ful	B-L	A	7	No	Cle	Wls 1700	2F	R	7.33	82.0	Wls 30	41A	21	TD	Ros	8 1/2 x 3 1/2 x 1/4	C	198 1/4	141 1/4	41 1/4	44x3	60x4	58x3 1/2	58x3 1/2	58x3 1/2	58x3 1/2	12
13	Lon	D.Ful	B-L	A	7	No	Cle	Wls 1700	2F	R	7.33	82.0	Wls 30	41A	21	TD	Ros	8 1/2 x 3 1/2 x 1/4	C	198 1/4	141 1/4	41 1/4	44x3	60x4	58x3 1/2	58x3 1/2	58x3 1/2	58x3 1/2	13
14	Lon	D.Ful	B-L	A	7	No	Cle	Wls 1700	2F	R	7.33	82.0	Wls 30	41A	21	TD	Ros	8 1/2 x 3 1/2 x 1/4	C	198 1/4	141 1/4	41 1/4	44x3	60x4	58x3 1/2	58x3 1/2	58x3 1/2	58x3 1/2	14
15	Lon	D.Ful	B-L	A	7	No	Cle	Wls 1700	2F	R	7.33	82.0	Wls 30	41A	21	TD	Ros	8 1/2 x 3 1/2 x 1/4	C	198 1/4	141 1/4	41 1/4	44x3	60x4	58x3 1/2	58x3 1/2	58x3 1/2	58x3 1/2	15
16	Lon	D.Ful	B-L	A	7	No	Cle	Wls 1700	2F	R	7.33	82.0	Wls 30	41A	21	TD	Ros	8 1/2 x 3 1/2 x 1/4	C	198 1/4	141 1/4	41 1/4	44x3	60x4	58x3 1/2	58x3 1/2	58x3 1/2	58x3 1/2	16
17	Lon	D.Ful	B-L	A	7	No	Cle	Wls 1700	2F	R	7.33	82.0	Wls 30	41A	21	TD	Ros	8 1/2 x 3 1/2 x 1/4	C	198 1/4	141 1/4	41 1/4	44x3	60x4	58x3 1/2	58x3 1/2	58x3 1/2	58x3 1/2	17
18	Lon	D.Ful	B-L	A	7	No	Cle	Wls 1700	2F	R	7.33	82.0	Wls 30	41A	21	TD	Ros	8 1/2 x 3 1/2 x 1/4	C	198 1/4	141 1/4	41 1/4	44x3	60x4	58x3 1/2	58x3 1/2	58x3 1/2	58x3 1/2	18
19	Lon	D.Ful	B-L	A	7	No	Cle	Wls 1700	2F	R	7.33	82.0	Wls 30	41A	21	TD	Ros	8 1/2 x 3 1/2 x 1/4	C	198 1/4	141 1/4	41 1/4	44x3	60x4	58x3 1/2	58x3 1/2	58x3 1/2	58x3 1/2	19
20	Lon	D.Ful	B-L	A	7	No	Cle	Wls 1700	2F	R	7.33	82.0	Wls 30	41A	21	TD	Ros	8 1/2 x 3 1/2 x 1/4	C	198 1/4	141 1/4	41 1/4	44x3	60x4	58x3 1/2	58x3 1/2	58x3 1/2	58x3 1/2	20
21	Ow	P.Own	B-L	A	4	No	Spl 3	Ow	2F	R	10.0	195.0	Eat 74C	B41VM	528	T4	Woh	10x3x1/4	C	156 1/4	114 1/4	34	44x3	54x4	54x4	54x4	54x4	54x4	21
22	Ow	P.Own	B-L	A	4	No	Spl 3	Ow	2F	R	10.0	195.0	Eat 74C	B41VM	528	T4	Woh	10x3x1/4	C	156 1/4	114 1/4	34	44x3	54x4	54x4	54x4	54x4	54x4	22
23	Mod	D.B-L	B-L	A	7	No	Spl 6	Tim 66702D	WF	R	10.0	96.0	Tim 16302	W21M	802	FD	Ros	8x3x1/4	P	154 1/4	99 1/4	37	49x3	56x4	54x4	54x4	54x4	54x4	23
24	Bus	D.B-L	B-L	A	7	No	Spl 6	Tim 66702D	WF	R	10.0	96.0	Tim 16302	W21M	802	FD	Ros	8x3x1/4	P	154 1/4	99 1/4	37	49x3	56x4	54x4	54x4	54x4	54x4	24
25	Per	D.B-L	B-L	A	7	No	Spl 6	Tim 66702D	WF	R	10.0	96.0	Tim 16302	T41A	920	TD	Ros	12x3 1/2 x 1/4	T	180 1/4	101 1/4	37	42x3	58 1/2 x 3	54x4	54x4	54x4	54x4	25
26	Per	D.B-L	B-L	A	7	No	Spl 6	Tim 66702D	WF	R	10.0	96.0	Tim 16302	T41A	920	TD	Ros	12x3 1/2 x 1/4	T	180 1/4	101 1/4	37	42x3	58 1/2 x 3	54x4	54x4	54x4	54x4	26
27	Ow	P.Own	B-L	A	4	No	Spl 2	Ow	2F	R	10.0	195.0	Eat 74C	O41V	589	FD	Ow	8 1/2 x 3 1/2 x 1/4	T	120 1/4	73 1/4	33 1/4	42 1/2 x 3	54x4	54x4	54x4	54x4	54x4	27
28	Ow	P.Own	B-L	A	4	No	Spl 2	Ow	2F	R	10.0	195.0	Eat 74C	O41V	589	FD	Ow	8 1/2 x 3 1/2 x 1/4	T	120 1/4	73 1/4	33 1/4	42 1/2 x 3	54x4	54x4	54x4	54x4	54x4	28
29	Ow	P.Own	B-L	A	4	No	Spl 2	Ow	2F	R	10.0	195.0	Eat 74C	O41V	589	FD	Ow	8 1/2 x 3 1/2 x 1/4	T	120 1/4	73 1/4	33 1/4	42 1/2 x 3	54x4	54x4	54x4	54x4	54x4	29
30	Ow	P.Own	B-L	A	4	No	Spl 2	Ow	2F	R	10.0	195.0	Eat 74C	O41V	589	FD	Ow	8 1/2 x 3 1/2 x 1/4	T	120 1/4	73 1/4	33 1/4	42 1/2 x 3	54x4	54x4	54x4	54x4	54x4	30
31	Ow	P.Own	B-L	A	4	No	Spl 2	Ow	2F	R	10.0	195.0	Eat 74C	O41V	589	FD	Ow	8 1/2 x 3 1/2 x 1/4	T	120 1/4	73 1/4	33 1/4	42 1/2 x 3	54x4	54x4	54x4	54x4	54x4	31
32	Ow	P.Own	B-L	A	4	No	Spl 2	Ow	2F	R	10.0	195.0	Eat 74C	O41V	589	FD	Ow	8 1/2 x 3 1/2 x 1/4	T	120 1/4	73 1/4	33 1/4	42 1/2 x 3	54x4	54x4	54x4	54x4	54x4	32
33	Ow	P.Own	B-L	A	4	No	Spl 2	Ow	2F	R	10.0	195.0	Eat 74C	O41V	589	FD	Ow	8 1/2 x 3 1/2 x 1/4	T	120 1/4	73 1/4	33 1/4	42 1/2 x 3	54x4	54x4	54x4	54x4	54x4	33
34	Lon	D.Ful	B-L	A	7	No	Cle	Wls 1500	2F	R	10.0	96.0	Tim 16710H	L41HV	429	TI	Ow	9 1/2 x 3 1/2 x 1/4	C	139 1/4	78 1/4	34 1/4	40x2 1/2	50x3	51 1/2 x 5	51 1/2 x 5	51 1/2 x 5	51 1/2 x 5	34
35	You	D.B-L	B-L	A	7	No	Spl 6	Tim 66704DH	WF	R	10.0	96.0	Tim 16710H	L41HV	429	TI	Ow	9 1/2 x 3 1/2 x 1/4	C	139 1/4	78 1/4	34 1/4	40x2 1/2	50x3	51 1/2 x 5	51 1/2 x 5	51 1/2 x 5	51 1/2 x 5	35
36	Ow	D.B-L	B-L	A	7	No	Spl 6	Tim 66704DH	WF	R	10.0	96.0	Tim 16710H	L41HV	429	TI	Ow	9 1/2 x 3 1/2 x 1/4	C	139 1/4	78 1/4	34 1/4	40x2 1/2	50x3	51 1/2 x 5	51 1/2 x 5	51 1/2 x 5	51 1/2 x 5	36
37	Lon	D.Own	B-L	A	7	No	Spl 6	Tim 66704DH	WF	R	10.0	96.0	Tim 16710H	L41HV	429	TI	Ow	9 1/2 x 3 1/2 x 1/4	C	139 1/4	78 1/4	34 1/4	40x2 1/2	50x3	51 1/2 x 5	51 1/2 x 5	51 1/2 x 5	51 1/2 x 5	37
38	Lon	D.Own	B-L	A	7	No	Spl 6	Tim 66704DH	WF	R	10.0	96.0	Tim 16710H	L41HV	429	TI	Ow	9 1/2 x 3 1/2 x 1/4	C	139 1/4	78 1/								

Line Number	Make, Model and Capacity	General		Tire Size		Engine										Fuel System		Electrical System		Line Number							
		Chassis Price	Standard W.B.	Max. W.B. Furnished	Gross Vehicle Wt. (See Key Note)	Chassis Wt. (Stripped)	Front	Rear	Make and Model	Number of Cylinders Bore and Stroke	Piston Displacement	N.A.C.C. Rated H.P.	Max. Brake H.P. at Specified R.P.M.	Valve Arrangement	Camshaft Drive	Piston Material	Dia. Main Bearings	Length Main Bearings	No. Main Bearings		Oiling System	Governor Make	Carburetor Make	Fuel Feed	Ignition System Make	Generator, Starter Make	
Gasoline Tractor-Trucks—Cont'd																											
1	Brockway.....195	138	138		7500	P 34x7	DP34x7	Con	6-4 1/2 x 4 1/2	380.9	40.8	89-2400	H	C	C	3	13 1/2	7	PC	Ha	Zen	M	A-L	A-L	A-L	1	
2	Brockway.....220	138	138		7500	P 36x7	DP36x7	Con	6-4 1/2 x 4 1/2	427.5	45.9	100-2400	H	C	C	3	13 1/2	7	PC	Ha	Zen	M	A-L	A-L	A-L	2	
3	Brockway.....190	139	139		7500	P 34x7	DP34x7	Con	6-4 1/2 x 4 1/2	380.9	40.8	89-2400	H	C	C	3	13 1/2	7	PC	Ha	Zen	M	A-L	A-L	A-L	3	
4	Brockway.....250	146	146		10000	P 40x8	DP40x8	Con	6-4 1/2 x 4 1/2	427.5	45.9	100-2400	H	C	C	3	13 1/2	7	PC	Ha	Zen	M	A-L	A-L	A-L	4	
5	Brockway.....290	146	146		10750	P 38x7	S 40x14	Con	6-4 1/2 x 4 1/2	611.4	54.2	116-1800	L	G	C	3	13 1/2	7	PC	Ha	Zen	M	A-L	A-L	A-L	5	
6	Diamond T.....303-2 1/2	1745	138		4500	P 32x6	DP32x6	Her WXB	6-3 1/2 x 3 1/2	298	33.7	65-2400	L	G	C	3	13 1/2	7	PC	Ha	Zen	V	A-L	A-L	A-L	6	
7	Diamond T.....503-2 1/2	2660	142		5700	P 34x7	DP34x7	Her WXC	6-4 1/2 x 4 1/2	339	38.4	75-2400	L	G	C	3	13 1/2	7	PC	Ha	Zen	V	A-L	A-L	A-L	7	
8	Diamond T.....551-2 1/2	2250	132		5300	P 32x6	DP32x6	Her WXC	6-4 1/2 x 4 1/2	339	38.4	75-2400	L	G	C	3	13 1/2	7	PC	Ha	Zen	V	A-L	A-L	A-L	8	
9	Diamond T.....602-3 T	3440	150		7300	P 36x8	DP36x8	Her WXC	6-4 1/2 x 4 1/2	428	45.9	94-2200	L	G	C	3	13 1/2	7	PC	Ha	Zen	V	A-L	A-L	A-L	9	
10	Freeman BAT-144 7T	6450	144		9800	P 38x9	DP38x9	Bud BA6	6-4 1/2 x 5 1/2	411	40.8	83-2100	L	G	C	3	9 1/2	4	PC	Bu	Str	E	R-Bo	R-Bo	R-Bo	10	
11	Freeman GLT-144 7 1/2 T	7050	144		10500	P 38x9	DP38x9	Bud GL6	6-4 1/2 x 5 1/2	572.5	48.6	114-1900	L	G	C	3	10 1/2	4	PC	Bu	Str	E	R-Bo	R-Bo	R-Bo	11	
12	Gen. Mot. 2216 2 1/2-3	1025	130	14000	2975	P 30x5	DP30x5	Pontiac	6-3 1/2 x 3 1/2	250	26.3	58-1800	L	G	C	3	10 1/2	5	PC	No	Mar	M	D-R	D-R	D-R	12	
13	Gen. Mot. 2513 2 1/2-3	1385	130	14000	3545	P 32x6	DP32x6	Buick	6-3 1/2 x 3 1/2	257.2	28.3	76-2500	H	G	C	3	10 1/2	4	PC	Ha	Mar	M	D-R	D-R	D-R	13	
14	Gen. Mot. 3204 3-4 T	1700	141	17000	4645	P 32x6	DP32x6	Buick	6-3 1/2 x 3 1/2	257.2	28.3	76-2500	H	G	C	3	10 1/2	4	PC	Ha	Mar	M	D-R	D-R	D-R	14	
15	Gen. Mot. 4201 4-5 T	1845	141	19000	4725	P 32x6	DP32x6	Buick	6-3 1/2 x 3 1/2	257.2	28.3	76-2500	H	G	C	3	10 1/2	4	PC	Ha	Mar	M	D-R	D-R	D-R	15	
16	Gen. Mot. 4404 5-6 1/2	2095	141	23000	5095	P 34x7	DP34x7	Buick	6-3 1/2 x 3 1/2	257.2	28.3	76-2500	H	G	C	3	10 1/2	4	PC	Ha	Mar	M	D-R	D-R	D-R	16	
17	Gen. Mot. 6202 6 1/2-7 1/2	3035	154	28000	6925	P 34x7	DP34x7	Buick	6-3 1/2 x 3 1/2	331.4	33.7	94-2500	H	G	C	3	10 1/2	4	PC	Ha	Mar	M	D-R	D-R	D-R	17	
18	Gen. Mot. 6208 7 1/2-8 1/2	3250	154	30000	7100	P 36x8	DP36x8	Buick	6-3 1/2 x 3 1/2	331.4	33.7	94-2500	H	G	C	3	10 1/2	4	PC	Ha	Mar	M	D-R	D-R	D-R	18	
19	Gen. Mot. 8203 8 1/2-10	3935	155	35000	7750	P 36x8	DP36x8	Buick	6-3 1/2 x 3 1/2	331.4	33.7	94-2500	H	G	C	3	10 1/2	4	PC	Ha	Mar	M	D-R	D-R	D-R	19	
20	Gen. Mot. 8207 10-12T	4070	155	40000	7850	P 38x7	DP38x7	Buick	6-3 1/2 x 3 1/2	331.4	33.7	94-2500	H	G	C	3	10 1/2	4	PC	Ha	Mar	M	D-R	D-R	D-R	20	
21	Gramm.....B118 3 Ton	1445	118	174	3875	P 30x5	DP30x5	Lyc 4SL	6-3 1/2 x 3 1/2	224.0	25.3	56-2700	L	G	A	3	10 1/2	4	PC	No	Zen	M	A-L	A-L	A-L	21	
22	Gramm.....C122 4 Ton	1845	122	196	4820	P 32x6	DP32x6	Lyc ASA	6-3 1/2 x 3 1/2	278.6	31.5	85-2750	L	G	A	3	10 1/2	4	PC	No	Zen	M	A-L	A-L	A-L	22	
23	Gramm.....D122 5 Ton	2045	122	196	5020	P 32x6	DP32x6	Lyc TS	6-3 1/2 x 3 1/2	353.8	36.2	90-2200	L	G	A	3	10 1/2	4	PC	No	Zen	M	A-L	A-L	A-L	23	
24	Gramm.....E118 6 Ton	2845	118	196	5200	P 34x7	DP34x7	Lyc TS	6-3 1/2 x 3 1/2	353.8	36.2	90-2200	L	G	A	3	10 1/2	4	PC	No	Zen	M	A-L	A-L	A-L	24	
25	Gramm.....45-10 Ton	4045	153	200	7600	S 36x12*	S 36x12*	Her L	4-4 1/2 x 5 1/2	353.8	36.2	90-2750	L	G	A	3	10 1/2	4	PC	No	Zen	M	A-L	A-L	A-L	25	
26	Gramm.....45-10 Ton	4045	153	200	7600	S 36x12*	S 36x12*	Lyc TS	4-4 1/2 x 5 1/2	353.8	36.2	90-2750	L	G	A	3	10 1/2	4	PC	No	Zen	M	A-L	A-L	A-L	26	
27	Gramm.....60 15 Ton	3795	153	200	8700	S 36x8	S 36x14	Lyc TS	4-4 1/2 x 5 1/2	353.8	36.2	90-2750	L	G	A	3	10 1/2	4	PC	No	Zen	M	A-L	A-L	A-L	27	
28	Gramm.....60 15 Ton	3795	153	200	8700	S 36x8	S 36x14	Lyc TS	4-4 1/2 x 5 1/2	353.8	36.2	90-2750	L	G	A	3	10 1/2	4	PC	No	Zen	M	A-L	A-L	A-L	28	
29	Hug.....486	140	140		6430	P 34x7	DP34x7	Bud DW6	6-3 1/2 x 3 1/2	331	32.7	73-2200	L	G	C	3	10 1/2	4	PC	Bu	Zen	V	A-L	D-R	D-R	29	
30	Indiana.....89	137	137		3650	P 32x6	DP32x6	Con	6-3 1/2 x 4 1/2	248.2	27.3	65-2700	L	G	C	3	10 1/2	4	PC	No	Str	V	A-L	A-L	A-L	30	
31	Indiana.....140	138	138		5500	P 32x6	DP32x6	Con	6-4 1/2 x 4 1/2	311	38.4	73-2400	H	C	C	3	13 1/2	7	PC	KP	KP	Str	M	A-L	A-L	A-L	31
32	Indiana.....170	138	138		6800	P 32x6	DP32x6	Con	6-4 1/2 x 4 1/2	380.9	40.8	88-2400	H	C	C	3	13 1/2	7	PC	KP	KP	Str	M	A-L	A-L	A-L	32
33	Indiana.....195	138	138		7500	P 34x7	DP34x7	Con	6-4 1/2 x 4 1/2	428	45.9	94-2200	L	G	C	3	13 1/2	7	PC	KP	KP	Str	M	A-L	A-L	A-L	33
34	Indiana.....220	138	138		8200	P 36x8	DP36x8	Con	6-4 1/2 x 4 1/2	427.5	45.9	100-2400	H	C	C	3	13 1/2	7	PC	KP	KP	Str	M	A-L	A-L	A-L	34
35	Indiana.....190	139	139		7625	P 34x7	DP34x7	Con	6-4 1/2 x 4 1/2	380.9	40.8	88-2400	H	C	C	3	13 1/2	7	PC	KP	KP	Str	M	A-L	A-L	A-L	35
36	Indiana.....250	146	146		10000	P 40x8	DP40x8	Con	6-4 1/2 x 4 1/2	427.5	45.9	100-2400	H	C	C	3	13 1/2	7	PC	KP	KP	Str	M	A-L	A-L	A-L	36
37	Indiana.....290	146	146		10750	P 38x7	S 40x14	Con	6-4 1/2 x 4 1/2	611.4	54.2	116-1800	L	G	C	3	13 1/2	7	PC	FP	FP	Str	E	L-N	L-N	L-N	37
38	Int. Harvester.....A-1 3	138	164	9300	4300	B 5.50/20	DB6.00/20	Lyc 4SLH	6-3 1/2 x 4 1/2	224	25.3	61-2800	L	G	C	3	10 1/2	4	PC	No	Zen	V	D-R	D-R	D-R	38	
39	Int. Harvester.....A-4	145	130	10700	5070	P 32x6	DP32x6	Own FBB	6-3 1/2 x 4 1/2	279	31.5	65-2800	H	G	C	3	13 1/2	7	PC	Ha	Zen	V	D-R	D-R	D-R	39	
40	Int. Harvester.....A-5	145	130	10700	5070	P 32x6	DP32x6	Own FBB	6-3 1/2 x 4 1/2	279	31.5	65-2800	H	G	C	3	13 1/2	7	PC	Ha	Zen	V	D-R	D-R	D-R	40	
41	Int. Harvester.....A-6	156	210	17750	5756	P 34x7	DP34x7	Own FBB	6-3 1/2 x 4 1/2	279	31.5	65-2800	H	G	C	3	13 1/2	7	PC	Ha	Zen	V	D-R	D-R	D-R	41	
42	Int. Harvester.....HS-54	130	130		7675	S 36x5	S 36x8	Has 151	4-4 1/2 x 5 1/2	312	28.9	54-1800	H	C	A	3	10 1/2	4	PC	HS	Zen	G	R-Bo	D-R3	D-R3	42	
43	Int. Harvester.....HS-54C	130	130		7900	S 36x5	S 36x10	Has 151	4-4 1/2 x 5 1/2	312	28.9	54-1800	H	C	A	3	10 1/2	4	PC	HS	Zen	G	R-Bo	D-R3	D-R3	43	
44	Int. Harvester.....W-1	130	130	20100	8100	S 36x5	S 36x8	Has 151	4-4 1/2 x 5 1/2																		

KEY OF REFERENCES

GENERAL

Gross Vehicle Weight—Chassis weight, plus body and cab, plus pay load.
Chassis Price is for truck with standard wheelbase listed and with tires listed F.O.B. factory, unless otherwise specified.

TIRES

B—Balloons
DB—Dual Balloons standard equipment.
P—High Pressure Pneumatics standard equipment.
DP—Dual High Pressure Pneumatics standard equipment.
S—Solids.
DS—Dual Solids.
°—Pneumatics furnished at extra cost.

ENGINE

Make

Bud—Buda Company.
Con—Continental Motors Corp.
HaS—American Car & Fdy. Co.
Her—Hercules Motor Corp.
Lyc—Lycoming Motor Corp.
Wau—Waukesha Motor Co.
Wis—Wisconsin Motor Mfg. Co.

Valve Arrangement

H—In head.
L—"L"—Head.
S—Sleeve.
T—"T"—Head.

Camshaft Drive

C—Chain.
G—Gear.

Piston Material

A—Aluminum alloy.
B—Semi-steel.
C—Cast iron.
N—Nickel iron.
S—Aluminum alloy with strut

Oiling System

CC—Pressure to main, connecting rod and camshaft bearings.
FP—Pressure to main, connecting rod, camshaft bearings and piston pins.
PC—Pressure to mains and connecting rod bearings.
PG—Pump, gravity and splash.
PS—Pressure with splash.
SP—Circulating with splash

Governor

Bf—Bethlehem Fabricators, Inc.
Bu—Buda
Co—Continental.
Ha—Handy Governor Co.
HS—Amer. Car & Fdy. Co.
KP—Handy Governor Co.
Mo—Monarch.
No—Not supplied.
On—Own
Op—Optional.
Pe—Pierce Governor Co.
Si—Simplex (Elsemann Magneto Corp.)
St—Sterling.
Wa—Waukesha.

Radiator

Bus—Bush Mfg. Co.
Chi—Chicago Mfg. Co.
Fed—Feddars Mfg. Co.
G&O—G & O Mfg. Co.
Har—Harrison Rad. Corp.
Hex—Hexcel Rad. Co.
Lon—Long Mfg. Company.
McC—McCord Rad. & Mfg. Co.
Mod—Modine Mfg. Co.
Per—Perflex Corp.
R-T—Rome-Turney Rad. Co.
You—Young Rad. Company.

FUEL SYSTEM

Carburetor Make

Car—Carter Carburetor Co.
Joh—Johnson.
Mar—Marvel Carburetor Co.
Sch—Wheeler Schebler Co.
Ste—Detroit Lubricator.
Str—Stromberg Motor Dev. Co.
Til—Tillotson Mfg. Co.
Zen—Zenith-Detroit Corp.

Fuel Feed

E—Electric Pump.
G—Gravity.
M—Mechanical Pump.
P—Pressure.
V—Vacuum.

ELECTRICAL SYSTEMS

Ignition System, Generator and Starter Make

A-Bo—Amer. Bosch Magneto Co.
R-Bo—Robert Bosch Magneto Co.
Apo—Apollo Magneto Corp.
D-R—Delco Remy Company.
Eis—Elsemann Magneto Corp.
L-N—Leece-Neville Co.
N-E—North East Elec. Co.
Spl—Splitdorf Electrical Co.
1—Generator and Starter at extra cost.
2—Starter not supplied. Generator at extra cost.
3—Starter at extra cost.

CLUTCH

Type and Make

D—Multiple disk.
dp—Double Plate.
O—Plate in oil.
P—Single plate.

Make

B&B—Borg & Beck Co.
B-L—Brown-Lipe Gear Co.
Cla—Clark Equipment Co.
Cov—Covert Gear Co.
D-G—Detroit Gear & Mach. Co.
Ful—Fuller & Sons Mfg. Co.
H-S—Merchant & Evans Co.
Lon—Long Mfg. Company.
M-E—Merchant & Evans.
M.M.—Mechanics Mach. Co.
Mun—Muncie Products Div. General Motors Corp.
Roc—Rockford Drill Machine Co.
W-G—Warner Gear Co.

GEARSET

Make and Model

B-L—Brown-Lipe Gear Co.
Cla—Clark Equipment Co.
Cov—Covert Gear Co.
D-G—Detroit Gear & Mach. Co.
Ful—Fuller & Sons Mfg. Co.
M.M.—Mechanics Mach. Co.
Mun—Muncie Products Div. General Motors Corp.
W-G—Warner Gear Co.
War—Warner Corp.

Location

A—Amlships.
J—Unit with jackshaft.
U—Unit with engine.

Auxiliary, Location and Number of Speeds

No—Not furnished.
Op—Optional at extra cost.
A—Amlships.
R—Rear of amlships main transmission.
U—Unit with engine.

UNIVERSAL JOINTS

Blo—Blood Bros. Mach. Co.
B-C—Blood and Cleveland.
Cle—Cleveland Steel Prod. Corp.
Har—Spicer Mfg. Co.
M.M.—Mechanics Machine Co.
PeS—Peters and Spicer.
Pet—Peters.
P-S—Peters and Sneed.
S-C—Spicer and Cleveland.
Spi—Spicer Mfg. Co.
S-P—Superior Universal Products Co.
SpB—Spicer and Blood Bros.
SpP—Spicer and Pick.
S-T—Spicer & Thermold.
U-M—Universal Machine Co.
U-P—Universal Products Co.

REAR AXLE

Make

Cla—Clark Equip. Co.
Col—Columbia Axle Co.
Con—Continental Axle Co.
Eat—Eaton Axle Co.
Sal—Salisbury Axle Co.
Tim—Timken Det. Axle Co.
Wis—Wisconsin Axle Co.

Final Drive and Type

B—Bevel.
C—Chain.
D—Dead.
I—Internal Gear.
2—Double Reduction.
R—Relay—Pendulum Drive.
S—Spiral Bevel.
W—Worm.
½—Semi-Floating.
¾—Three-Quarter Floating.
F—Full Floating.

Drive and Torque

H—Hotchkiss
R—Radius Rods.
T—Torque Arm.
U—Torque Tube.
O—Radius Rods Optional.

WHEELS DRIVEN

2—Forward pair of rear wheels.
4F—Front wheels and forward pair of rear wheels.
4R—Four rear wheels.
6—Six wheels.

FRONT AXLE

Make and Model

Shu—Shuler Axle Co., Inc.
Cla—Clark Equipment Co.
Col—Columbia Axle Co.
Con—Continental Axle Co.
Eat—Eaton Axle Co.
Sal—Salisbury Axle Co.
She—Sheldon.
Tim—Timken Det. Axle Co.
Wis—Wisconsin Axle Co.

BRAKES

Service Make

B—Bendix.
BE—Bendix front, Eaton rear.
BO—Bendix front, Own rear.
C—Columbia.
K—Clark.
L—Lockheed.
LO—Lockheed front, Own rear.
O—Own.
OE—Own front, Eaton rear.
OW—Own front, Wisconsin rear.
S—Steeldraulic.
T—Timken.
W—Wisconsin.

Location

2—Two Wheel
4—Four Wheel.
6—Six Wheel.
2/4—Two wheel brakes effective on all four wheels through driveshaft.
F—Driveshaft.
J—Jackshaft.
P—Propellor shaft.
P/4—Propellor shaft effective on four wheels.
r—Four rear wheels.

Type

I—Internal.
Y—Internal front and external rear.
X—External.

Method of Operation

A—Air.
D—Hydraulic and mechanical.
H—Hydraulic.
M—Mechanical.
V—Vacuum.

Hand

Location

C—Center of double propellor shaft.
2—Rear wheels.
4—Four wheels.
R—Worm or bevel gear shaft.
T—Transmission.
F—Driveshaft.

Type

D—Disk.
I—Internal.
X—External.
Y—Internal front and external rear

STEERING GEAR

Make

CAS—Columbus G. & P. Co.
Gem—Gemmer Mfg. Co.
Han—Hannum Mfg. Co.
Jac—Saginaw Steering Gear Div. General Motors Corp.
Lav—Hannum Mfg. Co.
Ros—Ross Gear & Tool Co.
Woh—Wohlrab Gear Co.

FRAME

Dimensions Side Rail Depth, Width of Flange, Thickness of Stock

Type

C—Channel.
I—"I" Beam.
P—Channel reinforced with plate.
T—Side rails tapered front and rear.

SPRINGS

Auxiliary

Type

½—Semi-elliptic above or below main springs.
¼—Quarter elliptic.
C—Coil spring.

a General Motors Truck Models shown are basic chassis in the ton-range classifications as advertised. Each model is available in a number of wheelbases and tire types (tire combinations—each type carrying a recommended gross weight) and priced accordingly. Gross vehicle weight indicated for each chassis in table is the recommended gross weight for type number specified without exceeding rated capacity of tires. The tire size does not affect the Straight Rating for which chassis is guaranteed and each Model is designed to operate satisfactorily under average conditions with loads giving a total gross weight (chassis, body, equipment and payload) equal to Straight Rating given below. Type numbers, Straight Rating and Payload Range, assuming nominal body allowance, for each model follow:

MODEL	STRAIGHT RATING	TYPE NUMBERS	RANGE OF PAYLOAD (TONS)
T-11	3800 lbs.	1001	¾
T-15	5400 lbs.	1501 to 1503	¾
T-17	6500 lbs.	1701 to 1708	¾ to 1½
T-19	8500 lbs.	2201 to 2218	1 to 2
T-25	8500 lbs.	2501 to 2513	1 to 1½
T-30	11000 lbs.	3201 to 3214	1½ to 2½
T-42	14000 lbs.	4201 to 4212	2 to 3½
T-44	15000 lbs.	4401 to 4412	2 to 4
T-60	18500 lbs.	6201 to 6218	2½ to 4½
T-82	22000 lbs.	8201 to 8212	3 to 6
T-90	28000 lbs.	9001 to 9007	5 to 7½

EATON EQUIPMENT

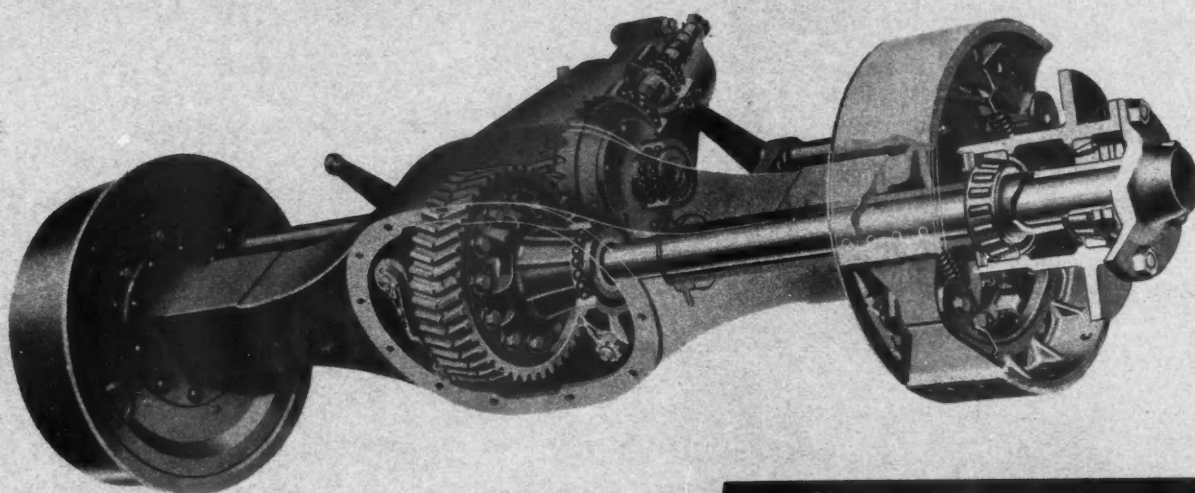


**AXLES
SPRINGS
BUMPER
EATON-LITES
EASY-ON CAPS**

PERFECTION HEATERS

THERE are forty-two car manufacturers and twenty-six truck and bus builders who equip with products made by Eaton interests. - - - This is a significant indication of a universal unwillingness to compromise with Quality.

EATON AXLES

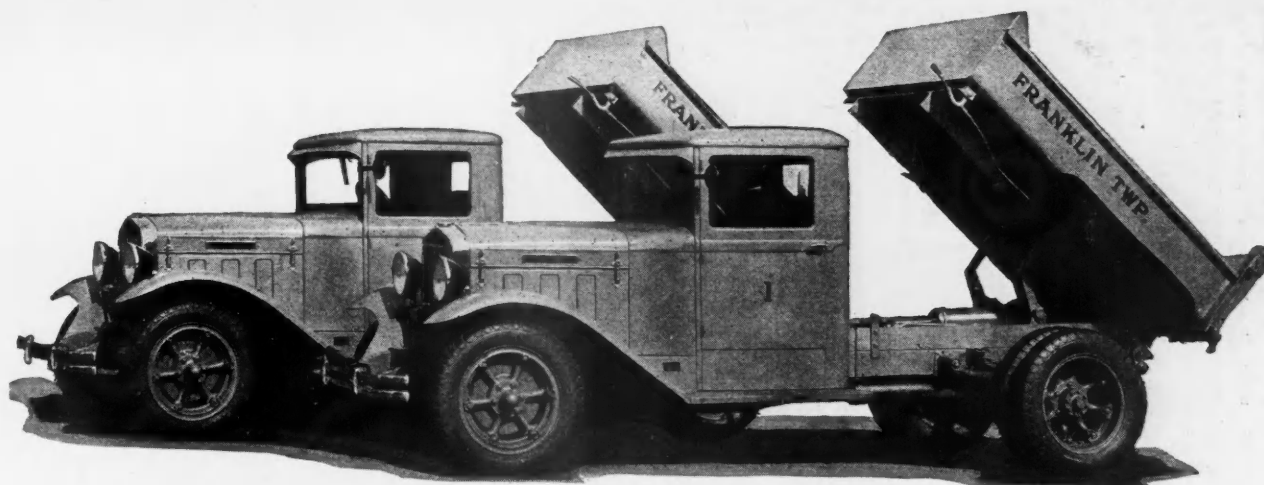


THOSE interested in the manufacture or use of commercial vehicles will find it worthwhile to discuss their axle problems with Eaton. Data and knowledge gained through intimate contact with the automotive industry since its pioneering days aid Eaton in being of real service to those granting the opportunity.

THE EATON AXLE & SPRING COMPANY
CLEVELAND, OHIO

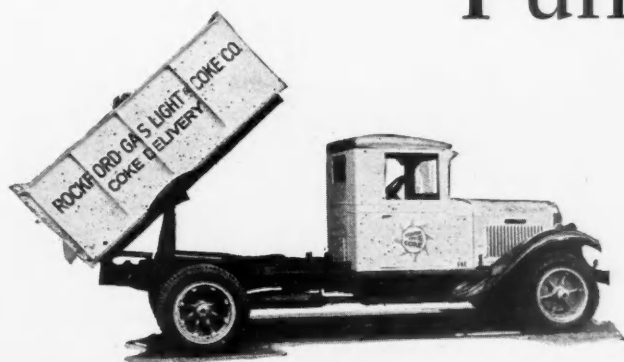


For
TRUCKS
and **BUSES**



Part of a fleet of Diamond T Trucks with $1\frac{1}{2}$ cu. yd. bodies, equipped with Model 4UBS St. Paul Underbody Hydraulic Hoists for Franklin Township, Pennsylvania, by The Schnabel Co., of Pittsburgh, Pa.

Punishment Takers



International Model A4-145" W. B. with 2-ton coke body Equipped with SUB St. Paul Underbody Hydraulic Hoist for the Rockford Gas, Light & Coke Co. of Rockford, Ill. by Farrell Mfg. Co., Joliet, Ill.

If you have a new truck or an old truck, a heavy truck or a light truck —there is a St. Paul Hoist for it.

Many a boxer takes the count because he can't stand the punishment of a hard bout. Dump trucks take a lot of punishment, too. And the business end of a dump truck is the hoist. St. Paul Hoists have been trained for years in the school of hard knocks. This has resulted in many exclusive features being built into St. Paul Hoists which, combined with their rugged strength, economy and ease of operation, have earned for them in every class from light to heavy weights the undisputed title of champions.

"Ask the Dump Truck Driver on the Job"

—St. Paul—

**VERTICAL AND UNDERBODY
HYDRAULIC HOISTS**

St. Paul Hydraulic Hoist Company

Factories at St. Paul, Minnesota

A St. Paul Hoist Distributor and Service Station is near you. Write for name and address.



MAKING THE AGE OF SPEED THE AGE OF SAFETY

THE Cleco Multi-Power Brake Booster has, for the first time, placed deceleration on a par with present-day acceleration. Revolutionary in design, low in first cost, this all-mechanical booster unit amplifies pedal power 300%. Being an integral part of the braking system, it *cannot* fail. It gives the most dependable braking available today.

Through an increase in brake-lining clearance and the elimination of "brake-riding", the Cleco Multi-Power Booster quickly saves its first cost in brake-lining replacement.

The Cleco Multi-Power Brake Booster is manufactured by The Cleveland Pneumatic Tool Company, Cleveland, Ohio. Export Department, 40 Rector St., New York City. Also manufacturers of Cleco-Gruss Air Springs.

CLECO AUTOMOTIVE PRODUCTS

MANUFACTURED BY THE CLEVELAND PNEUMATIC TOOL CO., CLEVELAND, OHIO

ONLY GENERAL

HAS THIS *patented*

Truck-Balloon Construction

***Eliminates Excessive Heat ••
the Major Cause of Blowouts
and Premature Wear •••••***

It is *heat* that causes most tire failures—heat generated by internal friction. At 200° a tire loses 25% of its strength—and a 12-ply tire is reduced in reality to only 9 plies. At 300° the strength loss jumps to 50%.

General's patented truck-balloon construction eliminates this excessive heat and maintains maximum tire efficiency on the toughest jobs. The Jumbo Truck-Balloon is cooler running than any other tire—proved with actual thermo-couple tests by impartial scientific bureaus. This principle, exclusive with General, means greater strength, slower wear, freedom from breakdowns—mileage increases as much as 350%.*

Thousands have changed over. In every class of service, from light express to the biggest heavy duty jobs, the General Truck-Balloon is piling up records of savings that challenge any comparison.

Your General Tire dealer has actual operators' records proving what it will do on your particular type of job. His complete Truck-Balloon line includes a tire to replace every high-pressure size without "lay-up," delay or anything "makeshift." He can change over trucks from solids in two hours or less! Get his quotation today. The General Tire and Rubber Co., Akron, Ohio.

* From Operators' Records on File.

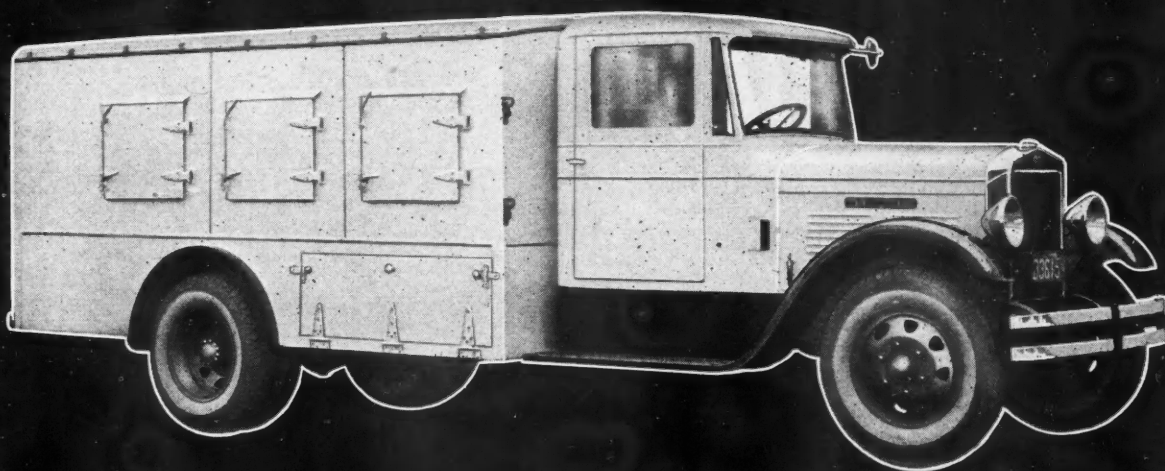
GENERAL

Jumbo Truck-Balloon

—goes a long way to make friends



Modern.....



DAY-ELDER SUPER-SERVICE-SIXES



The eleven new Day-Elder models range from the fast 1 ton truck to the extra-heavy-duty 12 ton six-wheeler.

IN the modern world of transportation, the truck must answer to more severe tests of speed, strength and load-ability, than ever. More rigid than any of these tests are the standards by which Day-Elder trucks and buses are built—achieving glowing records that have written themselves high on the scrolls of modern business service.

Day-Elder Super-Service-Sixes not only LOOK modern—they ARE modern by every 1931 measure of performance. Skilled engineering co-ordinating with the finest truck units, give these trim, hand-somely modelled trucks the essential qualities that make for years of economical, satisfactory service.

NATIONAL MOTORS MFG. CO. IRVINGTON, N. J.

Export Office, 15 Park Row, New York City

An Additional Feature-- on the Precision-Built Motor Truck

Battery failure occurs so seldom that many men think they don't need to be protected against it. —But, battery failure occurs often enough to prove that every user of Leece-Neville Voltage Regulation is making a profit on his smart judgment.

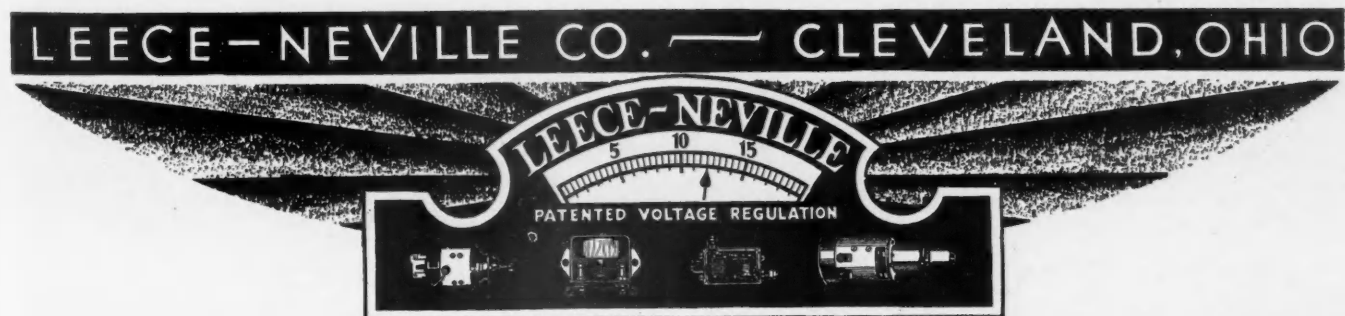
The purchaser of a new Precision-Built Motor Truck is given the privilege of specifying a Leece-Neville Voltage Regulator on his truck or bus as optional equipment at slight additional cost. Take advantage of this opportunity. If you aren't acquainted with Leece-Neville Voltage Regulation and how it protects your equipment, ask for details. The facts will interest you.

Users of LEECE-NEVILLE Voltage Regulated Generators and Electrical Equipment on Motor Trucks

Ahrens-Fox Fire Engine Company
American Car and Foundry Motors Co.
American-LaFrance and Foamite Corp.
Autocar Company
Brockway Motor Truck Corporation
Diamond T Motor Car Company
Indiana Truck Company
Mack International Motor Truck Co.
Arthur F. Rehburger & Son, Inc.
Relay Motors Corporation
Sterling Motor Truck Company
White Motor Company

Voltage Regulation Minimizes Electric Maintenance

- 1 Battery cannot be overcharged.
- 2 The battery is charged only at the correct rate for its state of charge.
- 3 Battery will operate longer without requiring replenishing of electrolyte.
- 4 Life of battery greatly prolonged.
- 5 Lights can be operated direct from generator.
- 6 Loose connections will not cause lamp bulbs to burn out.
- 7 Makes most economical generator system.
- 8 Any Leece-Neville Voltage Regulated Generator can be used without battery.
- 9 Lamp life greatly prolonged.
- 10 Motor coaches fitted with Leece-Neville voltage regulated generators provide passengers with satisfactory illumination and safe transportation.



for **SPEED**
with **SAFETY**



Firestone

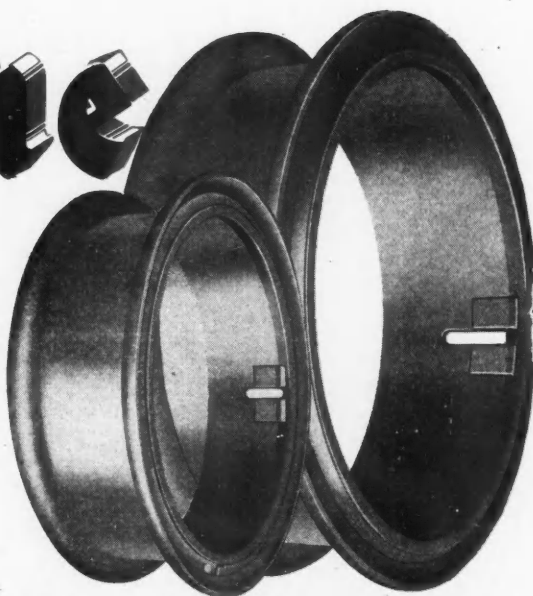
CONTINUOUS BASE RIMS

Transportation is a Service Measured by Reliability

Rims take the punishment—they must stand the strain; they receive the terrible thrusts of the weight of the vehicle at every turn, over bumps and ruts, every time the brakes are applied.

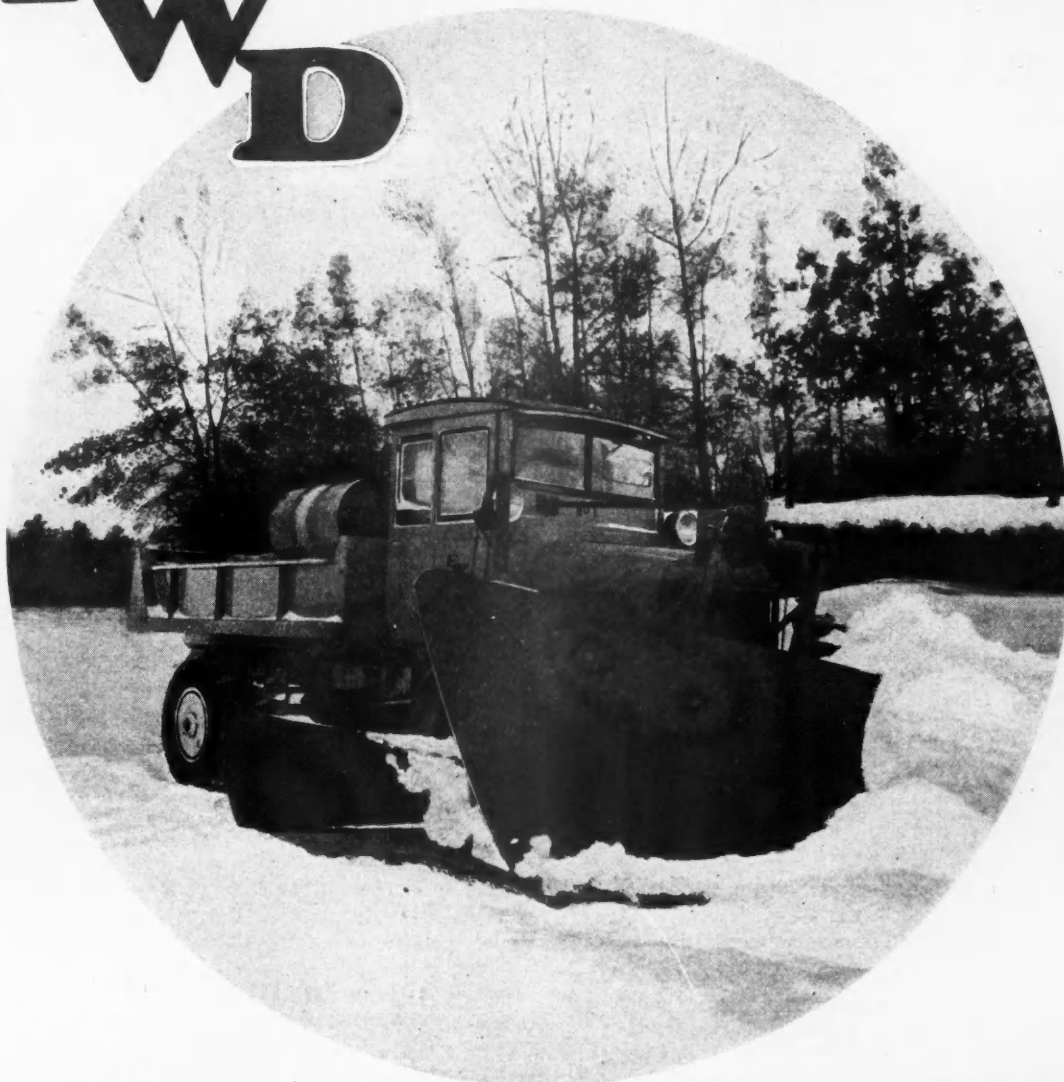
Firestone Rims protect both vehicle and load and increase tire mileage and achieve maximum Safety, Economy, Reliability.

Specify Firestone Rims for all kinds of wheels—Wood, Wire, Disc and Cast.



The Firestone Steel Products Co., Firestone Park, Akron, Ohio

FWD MORE than a Truck



FEATURES

Drives through front and rear wheels, brakes on all four wheels.

Steers as easily as a pleasure car.

A general service truck which adapts itself to special needs and provides more than economical transportation.

Furnished in 2 to 10 ton sizes, including four wheel, six wheel and tractor trucks.

Manufactured by the oldest and largest manufacturer of four wheel drive trucks in the world.

Have increased in sales 1084% in the past eight years.

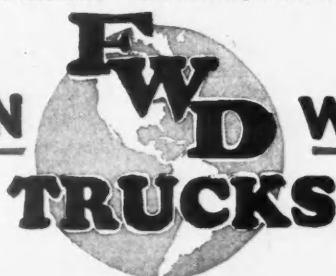
Received 62% of 1929 orders from owners of FWD Trucks.

FWD Trucks not only provide low-cost hauling over any kind or type of road . . . But they do more — They pull through mud and sand with capacity loads, and plough through snow when ordinary trucks would be stuck . . . this because of their FWD principle . . . each wheel is alive, power is delivered to each of the wheels, they have plenty of traction, extra power, putting every ounce to profitable work.

These advantages have made FWD's preferred for road building and year 'round maintenance, as well as for heavy duty in the oil, coal, lumber and other fields where economical performance is required . . . There are a few territories still open where FWD Dealers will be appointed. Perhaps you are in one of these districts. If you are, you can join this unusually profitable dealer organization. Write today for FWD's profitable dealer plan.

THE FOUR WHEEL DRIVE AUTO COMPANY, Clintonville, Wisconsin
CANADIAN FACTORY — KITCHENER, ONTARIO

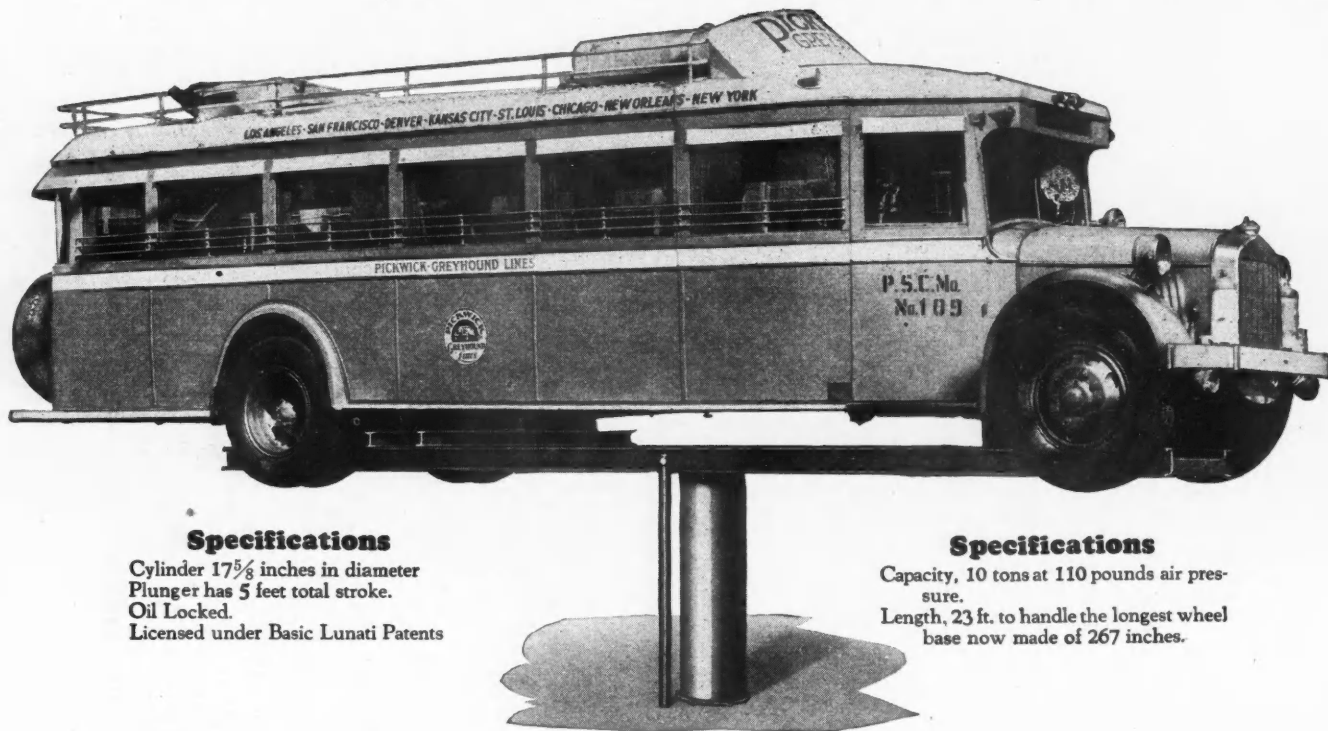
BACKED BY NATION



WIDE SERVICE

TRUCKS

New CURTIS-built TRUCK and BUS Lift!



Specifications

Cylinder $17\frac{5}{8}$ inches in diameter
Plunger has 5 feet total stroke.
Oil Locked.
Licensed under Basic Lunati Patents

Specifications

Capacity, 10 tons at 110 pounds air pressure.
Length, 23 ft. to handle the longest wheel base now made of 267 inches.

WITH a lifting capacity of 20,000 pounds, and a platform length of 23 feet, this new Curtis Truck and Bus Lift will handle the heaviest and longest trucks or single-deck buses made.

It lifts the vehicle by front and rear axles, leaving the wheels hanging free for easy brake and wheel adjustments.

The Curtis Bus Lift is of a single-cylinder post type. It can be rotated to a full 360 degrees, which permits the vehicle to be driven forward both going on and off the lift. Installation cost is less and uniformity of lifting and lowering speed is assured.

The Curtis Truck and Bus Lift provides complete certainty of safety through:

1. Tremendous structural strength—400 to 500% safety factor provided in all parts. The plunger itself is $17\frac{5}{8}$ " in diameter.

Mail this coupon to

Curtis Pneumatic Machinery Company

1929 Kienlen Ave., St. Louis—518-H Hudson Term., N. Y.

Please send data sheet and information about the new Curtis Truck and Bus Lift.

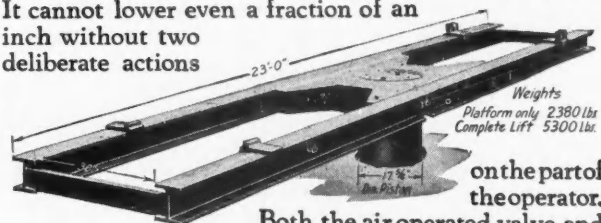
Name _____

Address _____

F1

2. The electrically welded platform is made of tremendously strong H-beams, capable of standing five times the weight called for by lift's capacity.

3. All oil, no air in the cylinder. Being both lifted and locked by incompressible oil, at any height you stop the lift it is as solid as if on concrete. It cannot lower even a fraction of an inch without two deliberate actions



on the part of the operator.

Both the air operated valve and oil lock valve must be opened before lowering can start and *neither of these controls are under the lift.* The Curtis Lift is super-safe.

4. A safety retard valve automatically and positively governs the lowering speed.

5. A safety leg furnished without extra cost is an extra safety feature.

6. Elimination of fire hazard from heavy gasoline fumes in pits.

Complete details of this new Curtis Truck and Bus Lift are given on an illustrated data sheet now ready. Mail the coupon for it and ask for any other special information you would like to have.



More than twice as many American Brakebloks are being sold today as were sold twelve months ago.

(Left)—Full Coverage type for passenger cars and light commercial vehicles.

(Above)—Keeper type for heavy-duty buses and trucks.

A Secret Formula

That's Why American Brakebloks Cut the Cost per Stop

American Brakebloks are different! No other brake material is even similar.

Most materials, for example, are bonded (as they have been for years) by the only agents available: rubbers, asphaltums, phenol compounds, etc. — all of which ignite or soften at low temperatures. But American Brakebloks are bonded by a new, secret compound which changes to a solid and which cannot be softened or volatilized by heat.

And there is another difference, even more important. Most bonding agents are merely applied to the surface of the material after the manufacturing process is nearly completed. But the American Brakeblok secret formula is thoroughly mixed with the raw materials. Thus, the frictional efficiency of American Brakebloks is not dependent on penetration, but is built right into every particle of the material.

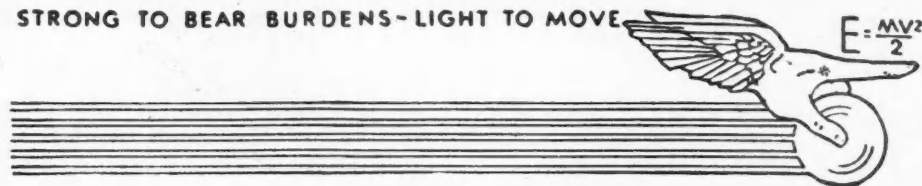
Think what this means to the fleet owner and bus operator! Now you can have a brake material which will not soften, swell, glaze or burn. Now you can cut the cost per stop! But be sure that you install the GENUINE American Brakebloks. Write us today for name of nearest jobber.

AMERICAN BRAKE MATERIALS CORPORATION
Industrial and Automotive Division American Brake Shoe & Foundry Co.
4660 Merritt Avenue . . . Detroit, Michigan, U. S. A.
Sales Offices: Chicago . . . New York . . . San Francisco
Export Department: 30 Water Street . . . New York City

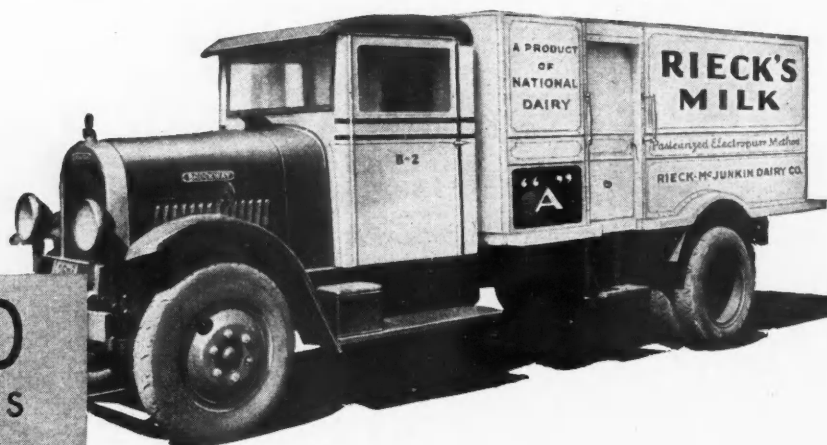
1. American Brakebloks have no metallic content to cut or score brake drums.
2. They recover quickly and completely from the effects of oil and water.
3. They are NON-COMPRESSIBLE.
4. They are made to fit every existing brake assembly.
5. They have been adopted by more than 40 manufacturers of motor vehicles and brakes.

American
BRAKEBLOKS

STRONG TO BEAR BURDENS—LIGHT TO MOVE



900
POUNDS
LESS



Dead weight decreased 28%

The truck of today must pay its way. An efficient chassis loaded down with needless weight is no longer efficient. That is why progressive body builders and wide-awake owners find the light, strong Alcoa Aluminum Alloy truck body a major factor of maximum performance.

The Rieck-McJunkin Dairy Company, of Pittsburgh, has made its fleet of delivery trucks more than pay their way—with this modern body metal. Averaging 150 miles per day with a pay load of 144 cases of milk—the instal-

lation of Alcoa Aluminum bodies cut off 900 pounds of dead weight.

Alcoa Aluminum Alloy structures, weighing only one-third to one-half as much as steel, meet all requirements of safety, strength and durability. Truck operators in practically every field are daily proving the advantages of the light, strong Alloys of Alcoa Aluminum for truck bodies.

For further information write:
ALUMINUM COMPANY of
AMERICA; 2439 Oliver Building,
PITTSBURGH, PENNSYLVANIA.

ALCOA ALUMINUM



**CARE
WILL SAVE
YOUR CAR**

STA-TITE

PISTON RINGS



*Restore that
Youthful
Performance*

Even in tapered or out-of-round cylinders which are not rebored or reground.

STA-TITE PISTON RINGS

**Save Oil
Save Gas
Renew Compression
Stop Piston Slap
Restore Power**

**An economical overhaul
without a long period of
"wearing-in."**

The Piston
RING COMPANY
Muskegon, Michigan

TWO YEARS AGO..

.. In March, 1928, Public Service Coordinated Transport of New Jersey added 331 buses to its fleet—*Budd-Michelin wheel equipment was specified.*

AND NOW...

.. This year, Public Service Coordinated Transport is placing 381 new buses in service—and Budd Duals are *again* specified.

There are now 2,500 Budd-equipped buses being operated by this company in New Jersey. Could there be any heartier endorsement of road-proved wheel efficiency?

© 1930, B. W. CO.

BUDD DUALS

*Can't
wobble*



*Can't
shimmy—*



*—And
they stop
side-sway!*



BUDD WHEEL COMPANY, DETROIT

**Nothing *Finer*
Can Be Said of Any
Motor Vehicle Than,
It is -**



**POWERED
BY
LYCOMING**

LYCOMING MOTORS

LYCOMING MANUFACTURING CO.
WILLIAMSPORT, PENNSYLVANIA

Lycoming's Vast Resources, Experience and Skill Are Dedicated to Leadership in Fine Motor Building



Heil Hoists Save Time!

Heil Hydraulic Hoists for dump truck service raise the body to full dumping position and dump the load in from 10 to 15 seconds depending on the speed of the truck motor.

The Heil equipped truck does not have to waste time maneuvering into a level position before dumping the load—regardless of the twist of the chassis frame the Heil Hoist will always raise the body.

From coast to coast—on highway building projects—for coal delivery—hauling earth, rock and all kinds of bulk materials Heil Hydraulic Hoists and Heil All-Steel Dump Bodies have established a reputation for dependable service.

Write today for the complete Heil Hoist, Body and Tank catalog assembled in an attractive binder. Address

Every Heil Hoist carries a written two year guarantee

THE HEIL co.

MILWAUKEE

CHICAGO

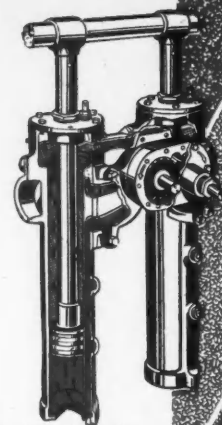
DETROIT

BRANCHES:
NEW YORK
35 DISTRIBUTORS

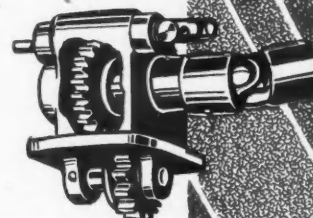
PHILADELPHIA

WISCONSIN

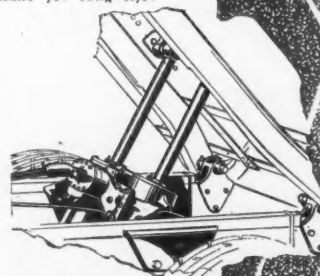
BOSTON



The Heil Twin Cylinder Hydraulic Hoist is compact, self-contained, no piping. Oil under pressure passing through channels cast into the walls is shown in solid red.



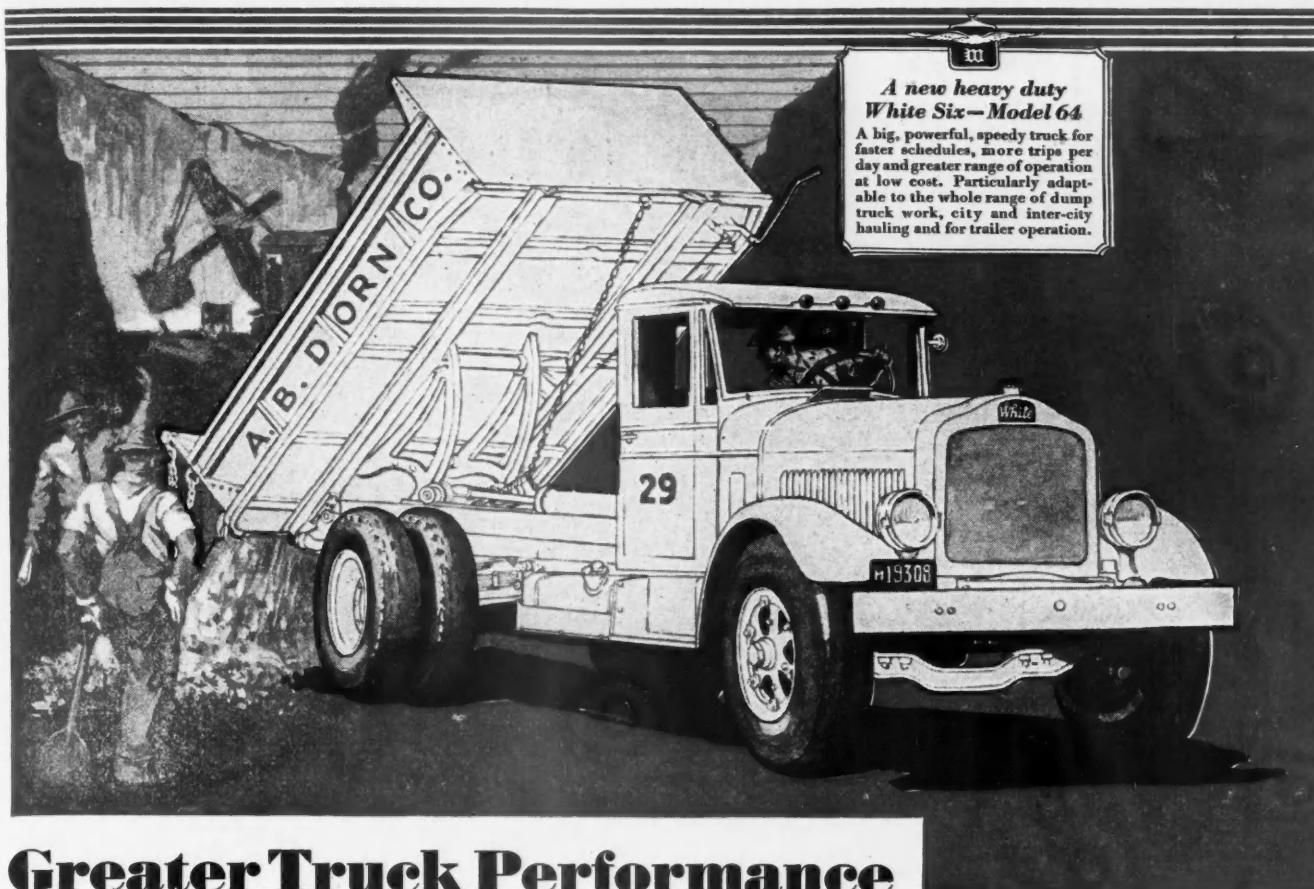
There is a Heil heavy duty power takeoff for every make and model of truck built. The idler gear and roller bearing construction make for long life.



The Heil Hoist mounts at the strongest point of the chassis frame—above the rear axle—the body cannot tip over backwards because it is secured to the hoist pistons.

September, 1930

*The Commercial Car Journal
and Operation & Maintenance*



Greater Truck Performance in every field with the new White Sixes

With the addition of the new Six Cylinder Medium Heavy Duty Model 63 and the Heavy Duty Model 64, White fully and completely covers every field of modern transportation.

Greater performance from every angle of flexibility, pick-up and power have been built into these White Sixes. Complete knowledge of today's requirements is responsible for the sound-

ness of White Six design.

White Sixes cover every field of hauling with a full range of capacities, including Light Duty, Medium Heavy Duty, and Heavy Duty models. Smooth and uninterrupted running, easy maintenance and added strength for absolute safety are outstanding features of every White Six.

In the Heavy Duty models White has combined extreme

ruggedness of chassis with abundant power to move heavy loads at modern highway speeds. Ease of handling and safe control under all conditions assure the maximum working efficiency.

With the new White Sixes you can maintain faster schedules, greater range of operation and absolute dependability that in the end means lowest cost.

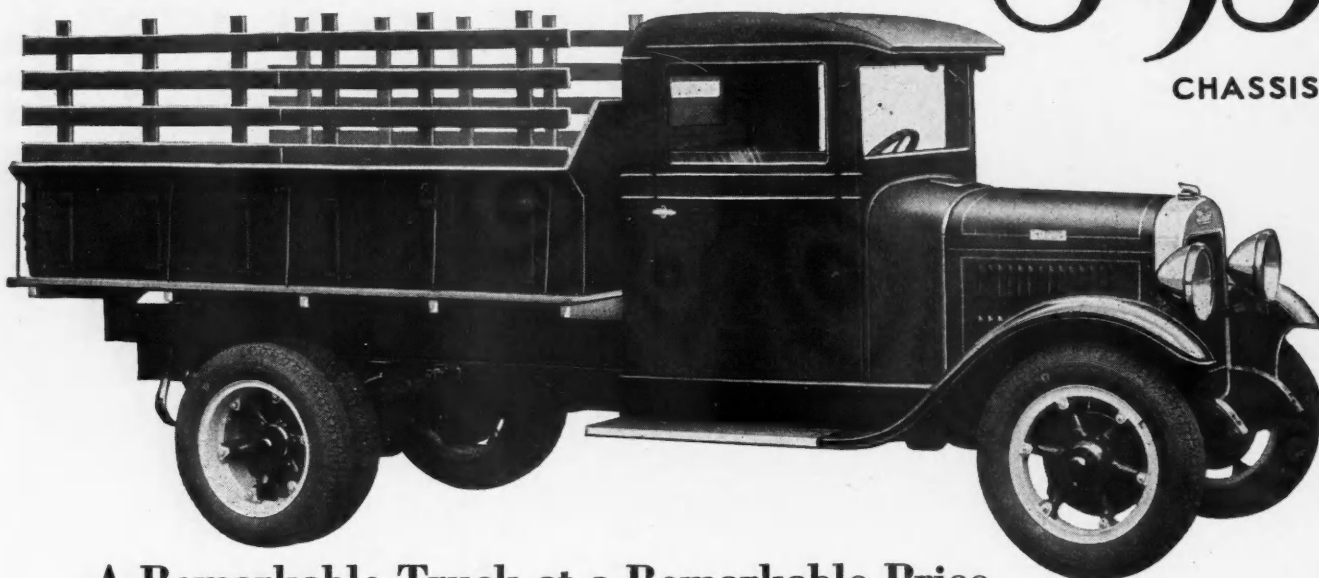
THE WHITE COMPANY, CLEVELAND

WHITE

A COMPLETE LINE OF FOUR AND SIX CYLINDER
**TRUCKS
BUSSES**

The New Stewart 1½ Ton Truck \$895

CHASSIS



A Remarkable Truck at a Remarkable Price

Another Stewart triumph! A new 1½ ton truck embodying a long list of mechanical features formerly found only on the finest trucks selling at a price that smashes all precedent. This new Stewart has a 7½ inch frame, 11 inch clutch, 4 speed transmission, dual-balloon tires and helper springs.

The same quality that has long marked Stewarts as "America's Greatest Truck Value" is found in this model. From radiator to tail light an honestly rated truck built by exclusive truck makers entirely of truck parts.

Truck users whose demands include speed, flexibility and long life at low operating costs may now enjoy Stewart quality at a hitherto unheard of price for 1½ ton capacity.

The new Stewart 1½ tonner is not a one-year truck. Stewart owners know by experience that the average life of a Stewart is 5 years or more. Ask the Stewart owners in your community the results they are getting. Complete detailed specifications will be sent upon request.

MODELS

BEVEL AXLE

1 ton 4 Cylinder..	\$ 695
1 ton 6 Cylinder..	795
1½ ton 4 Cylinder..	895
1½ ton 6 Cylinder..	995
1½ ton 6 Cylinder..	1195
1¾ ton 6 Cylinder..	1495
2 ton 6 Cylinder..	1695
2½ ton 6 Cylinder..	1990

Bus Chassis Fire Apparatus
f.o.b. Buffalo

Stewart

MOTOR TRUCKS

STEWART MOTOR CORPORATION
BUFFALO, N. Y.

Export Branch: 1 Broadway (Dept. 3)
NEW YORK CITY, U. S. A.

Cables: Stewartruk New York.
Codes: Acme, Bentley.

MODELS

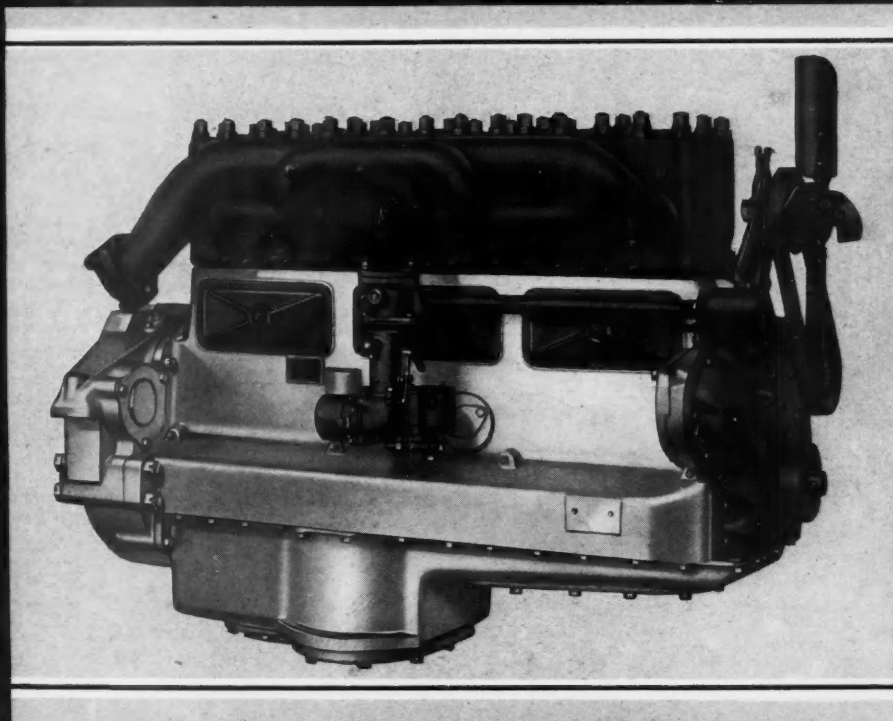
WORM AXLE

2 ton 6 Cylinder..	\$2290
2½ ton 6 Cylinder..	2690*
3 ton 6 Cylinder..	3290*
3½ ton 6 Cylinder..	3690*
5 ton 6 Cylinder..	4990*
6-7 ton 6 Cylinder..	5700*

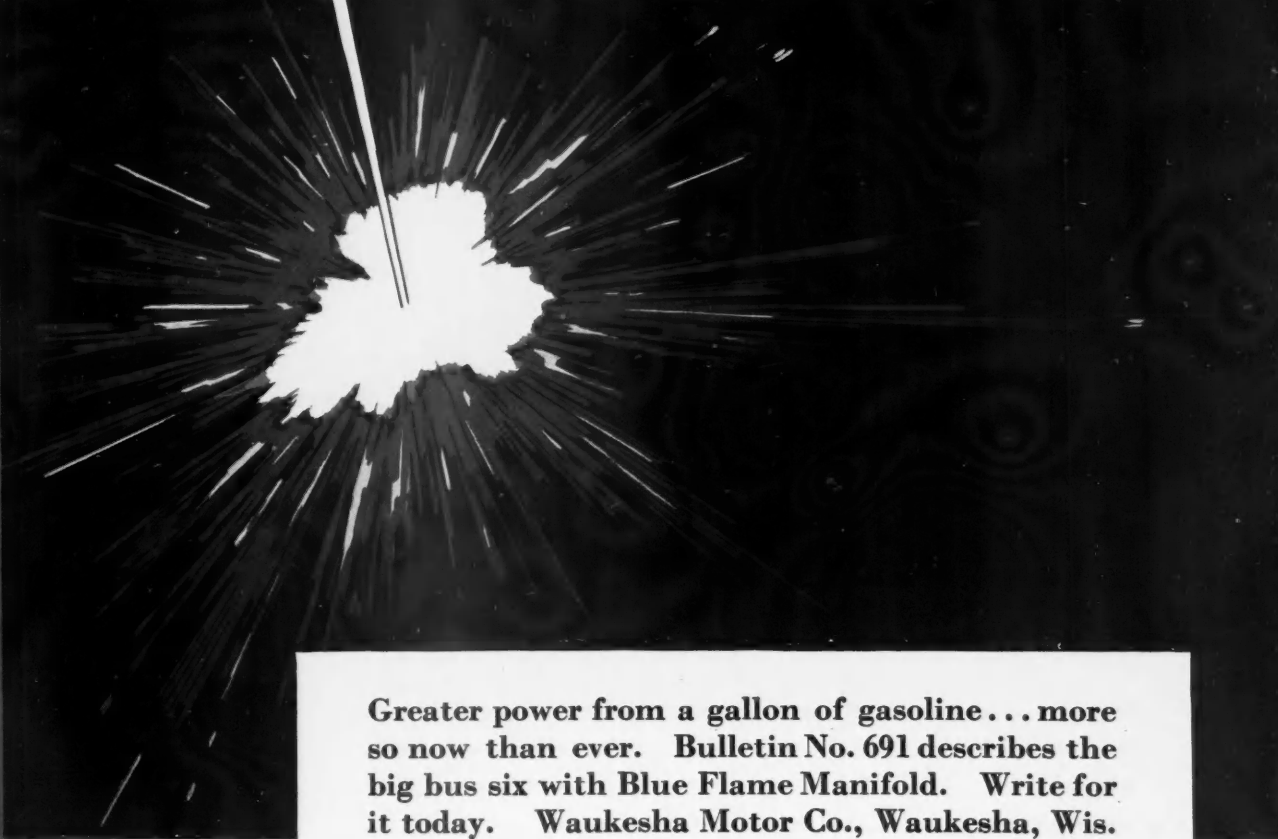
*Double Gear Rear Axle
Optional Equipment.

Bus Chassis Fire Apparatus
f.o.b. Buffalo

Stewart Trucks have won—By costing less to run



GREATER POWER
FROM A GALLON
OF GASOLINE...



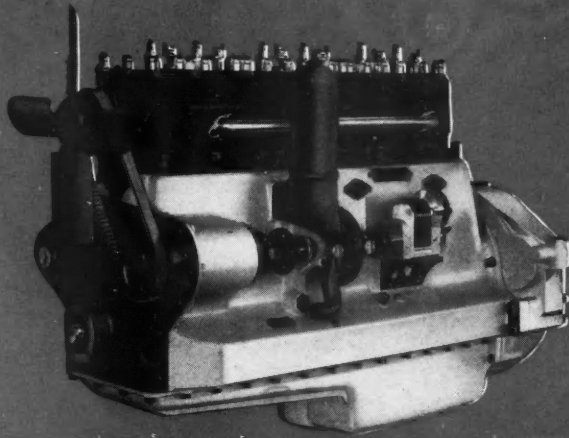
Greater power from a gallon of gasoline... more so now than ever. Bulletin No. 691 describes the big bus six with Blue Flame Manifold. Write for it today. Waukesha Motor Co., Waukesha, Wis.

336

WAUKESHA ENGINES



THE
SMOOTHEST
POSSIBLE
RIDE ▲ ▲ ▲ ▲



LOWER
UPKEEP



BIGGER
PROFITS



LONGER LIFE



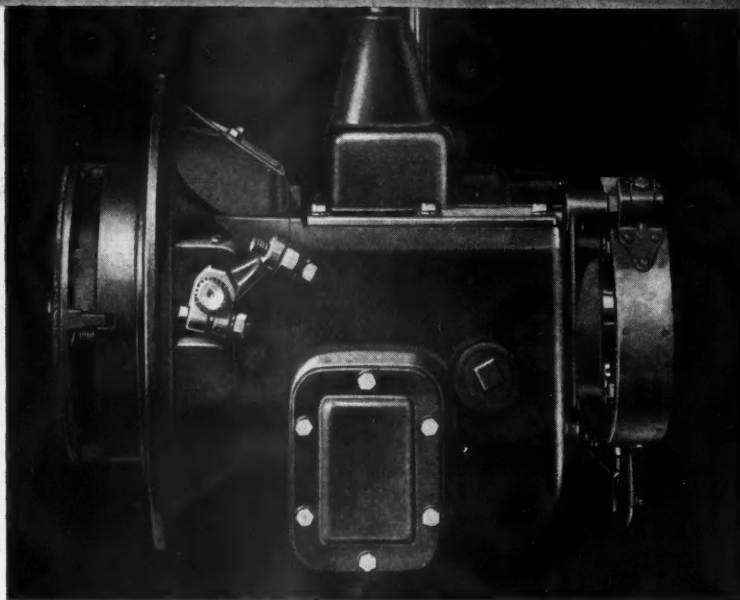
WAUKESHA ENGINES

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BROWN-LIPE



BROWN-LIPE—LONG THE STANDARD FOR QUALITY IN THE AUTOMOTIVE INDUSTRY NOW OFFERS THE FINEST LINE OF TRANSMISSIONS AND CLUTCHES IN ALL ITS HISTORY.

No. 214. Four speeds forward and one reverse. For 1 to 1½-ton speed trucks. Roller bearings throughout, except rear mainshaft which is ball.



ASSOCIATED *Spicer* COMPANIES

BROWN-LIPE
CLUTCHES and
TRANSMISSIONS

BROWN-LIPE GEAR CO.
SYRACUSE NEW YORK

SALISBURY
FRONT and REAR
AXLES

SPICER MFG. CORP.
TOLEDO OHIO

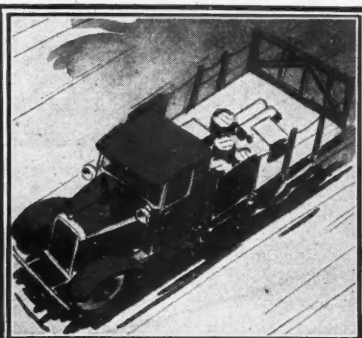
SPICER
UNIVERSAL
JOINTS

PARISH
FRAMES and
STAMPINGS

PARISH PRESSED STEEL CO.
READING PENNA.

Smooth...Smooth...Smooth

even at 200,000 miles



NEVER SCORE

At last! Release from scored, pitted brake drums. Gunitite Drums stay smooth and true—all their life.



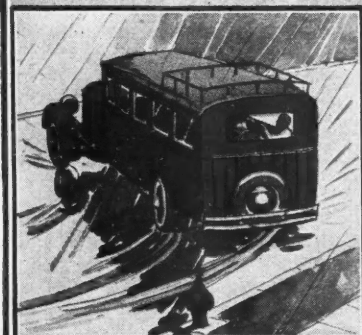
NEVER SHRED LININGS

Worn drums mean torn, shredded linings. Linings last 3 to 5 times longer on Gunitite Drums because they stay smooth.



SAVE ADJUSTMENTS

Worn drums throw brakes out of adjustment. Gunitite Drums save labor and lost service time by staying smooth and true.



SAVE TIRES

Grabbing, dangerous brakes! Gunitite Drums always give linings a smooth, even braking surface.

ON city bus service... hardest of all tests for brakes, brake drums, brake linings... Gunitite Drums have made and are making these outstanding service records—over 200,000 miles and *still smooth*—on busses averaging 5 stops to the mile!

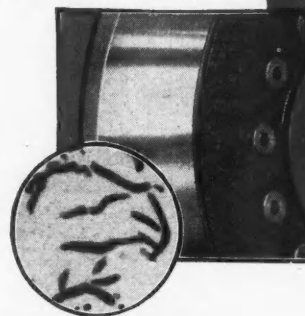
How can Gunitite Drums last so long? How can they escape *scoring*, and *distortion* in today's grinding, punishing traffic? Because Gunitite is a special, secret-process metal whose very structure defies wear. Because Gunitite gets smoother, smoother, *smoother* until its surface is almost like plate glass—under braking friction that would ruin an ordinary drum. Gunitite Drums don't roughen. Their high carbon content makes them extremely slow to heat. Flakes of graphite evenly distributed throughout the metal does away entirely with any tendency to roughen or score.

Get Gunitite Drums for every bus or truck you own. They're available on new equipment—and for replacement on all but a few rare makes of vehicles. Hundreds of fleet operators swung over to the new Gunitite Drums in the last few months. They'll solve all those brake drum troubles you've been having—and pay for themselves in saved linings alone. Ask for the new Gunitite Catalog—sent free on request.

THE GUNITITE CORPORATION
Rockford, Illinois

WHY GUNITITE IS SMOOTH

In the circle is an actual microphotograph of the graphite particles scattered evenly throughout Gunitite. With a pearlitic matrix similar to that of tool steel, Gunitite is hard without the "stickiness" found in ordinary steel. That, in a nutshell, is why Gunitite stays so hard and smooth under braking friction.



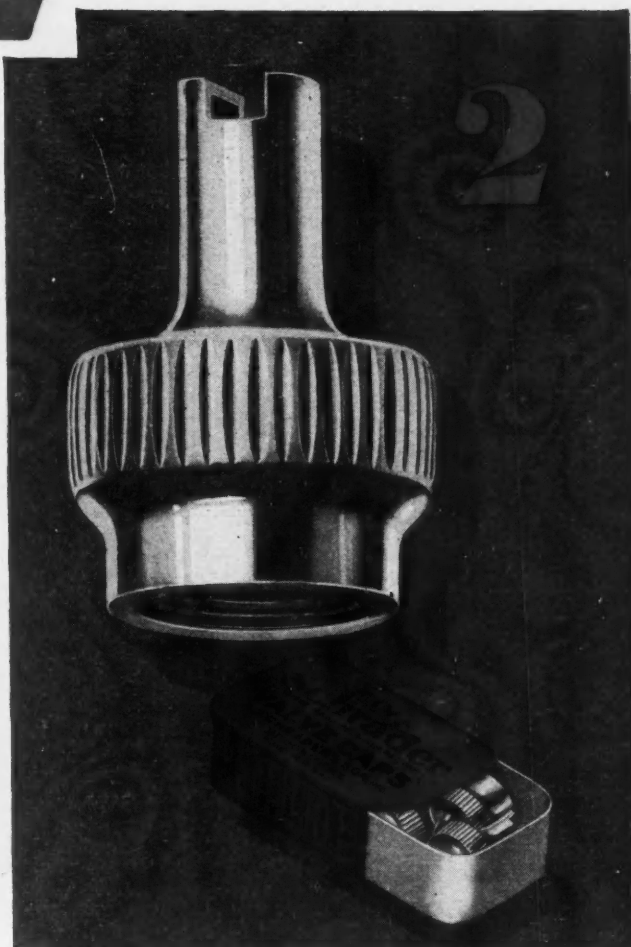
GUNITITE

BRAKE DRUMS



ALERT DEALERS

sell these 2 products



—for increased PROFITS

HERE'S a tip that's boosting profits for wide-awake dealers. Try it yourself: Just glance at the tire valves of every car that comes to your place of business. In most instances you will discover one or more valve caps missing. There's your chance to sell a box of Schrader Valve Caps.

Simply tell your customer that a valve cap should be on every valve stem to protect the valve mechanism from dust and dirt, and that Schrader Valve Caps are guaranteed airtight up to 250 lbs.

This same customer is a good prospect for a box of Schrader Valve Cores, too.

Just explain that valve cores are bound to wear out in time. No mechanism, however sturdy, will last forever. Tell him also that a spare box of genuine

Schrader Valve Cores is as necessary for emergency use as a spare tire.

One word of warning: Be sure the Valve Cores and Valve Caps you sell are genuine Schraders. It pays to be certain, for then you know that you are equipping your customer with the same good products that are used in more than 85% of all tubes made in the United States and Canada today.

Be sure it's a Schrader—Look for the name

Schrader

Makers of Pneumatic Valves Since 1844

Tire Valves



Tire Gauges



Millions of New Yorkers will see this attractive 2-ton, 6-cylinder Autocar Dispatch of the Eagle Pencil Company, which will carry millions of pencils to Manhattan stationers. Every feature of its appearance contributes to its advertising value. Note the side door for convenient curb deliveries.

Wall Street Gets Its Mikados Via Autocar

BREATHES there a man or woman of intelligence who has never written with a Mikado Pencil—leading product of the largest pencil factory in the world? » » » Two thousand people make Eagle Pencil Company products in Eagle's New York plant. Millions of people each year will see the new 6-cylinder, 2-ton Autocar Dispatch which makes Eagle deliveries to the stationery trade in Manhattan. » » » Autocars, built to pace-setting standards of precision, respond with flexibility and stamina to the exactions of heavy, city traffic just as they respond with ruggedness and reserve to the strains of trans-continental travel. They are graceful of line, and lend themselves admirably to the accomplishment of the important advertising function that is notably a duty of the truck-about-town to its owner.



AUTOCAR TRUCKS

THE AUTOCAR COMPANY, ARDMORE, PA.



Timken Heavy-Duty Mill Type Quad Bearings 29½" Bore, 46½" outside diameter, 29" width. Capacity 7,000,000 pounds.

Timken Bearings are Licking the Toughest Jobs in Industry—Hence their Vital Necessity in Motor Trucks

Sweeping on and up with an irresistible rush, Timken Bearings soar to greater and greater heights of achievement as they are pitted against the toughest jobs that Industry can produce... upsetting all preconceived ideas of production and production costs... revolutionizing anti-friction requirements... brushing aside old theories and traditions to make way for new standards of anti-friction efficiency, economy and endurance.

Terrific pressure loads such as are met in steel rolling mill service—as high as 7,000,000 pounds, are being carried by Timken Bearings in many of the country's largest steel plants.

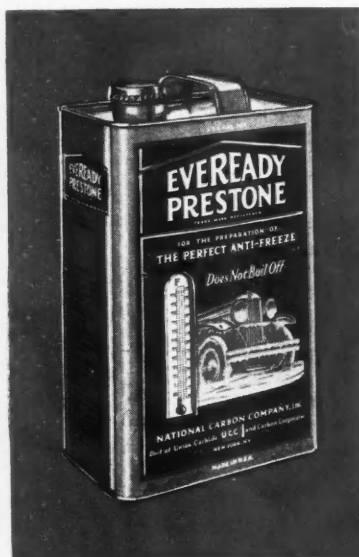
Hair-breadth accuracy such as is demanded by the finest precision machine tool work is maintained as a matter of regular daily routine.

And thrust and weight and shock—no matter how severe, are handled with equal capability and sureness whether encountered in such widely different types of heavy duty service as motor truck operation, paper mills, transcontinental limited trains, oil field equipment or any other kind of machinery.

Wherever wheels and shafts turn, "Timken Bearing Equipped" is the modern symbol of protection and saving.

You need and should demand Timken benefits in the truck equipment you buy. They are obtainable in most leading makes. The Timken Roller Bearing Company, Canton, Ohio.

TIMKEN *Tapered Roller* BEARINGS



**"...We have not had
one broken radiator
due to freeze-up."**

—Bell Transit Co.

WHEN a bus or truck gets a frozen radiator, the loss is often twofold. There is the cost of repairs, and the cost of having a unit tied up . . . out of service!

That is why the Bell Transit Co., and thousands of other fleet-owners, have found Eveready Prestone a good investment. Because it gives positive security, and because one filling is all that's required for the entire winter, Eveready Prestone is economical to use. Compare its cost per car with that of any other permanent anti-freeze available.

You can prepare your fleet for winter at your own convenience, with Eveready Prestone. It won't boil off, or overheat an engine. See that cooling-systems are clean and tight . . . then a single filling makes your fleet safe for the season. Eveready Prestone is now green in color. Write for your copy of "Eveready Prestone Dealers' Manual."

* * *

The Eveready Hour, radio's oldest commercial feature, is broadcast every Tuesday evening at nine (Eastern standard time) from WEAJ over a nationwide N. B. C. network of 31 stations.

NATIONAL CARBON COMPANY, INC.

General Offices: New York, N. Y.

Branches: Chicago Kansas City New York San Francisco

Unit of Union Carbide **UCC** and Carbon Corporation

W. D. WILLSON
J. H. TIER

PHONE EMPIRE 6622

BELL TRANSIT CO.
2130 NEWTON AVE.
DETROIT, MICH.

August 8, 1930

National Carbon Company
30 East 42nd Street
New York, N. Y.

Gentlemen:

For the past three winters we have been using Prestone as an antifreeze in all of our truck radiators, and we have found it entirely satisfactory.

We are operating twenty-two units doing practically all kinds of hauling, both local and long distance and since using Prestone we have not had one broken radiator due to a freeze-up.

While the original cost is somewhat higher than some other antifreeze solutions we find it good economy to use Prestone as for every freeze-up a truck is usually out of service the better part of a day. By eliminating these tie-ups we feel that Prestone is really worth the money.

Yours very truly
W. D. Willson
Bell Transit Co.

WJ/ad

**EVEREADY
PRESTONE**

(TRADE-MARK REG.)

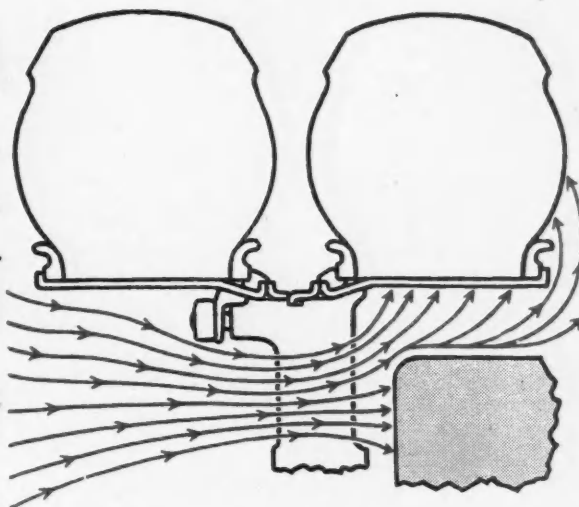
THE
ONE-SHOT ANTI-FREEZE



the Dual Wheel

that gives you *forced AIR* CIRCULATION

...and greatest tire mileage



Nothing will ruin a tire so quickly as heat—arch enemy of tire mileage. In many cases brake drum heat has burned up 85% of the normal expected mileage of tires. No tire, no matter how good, can hold up long under such punishment.

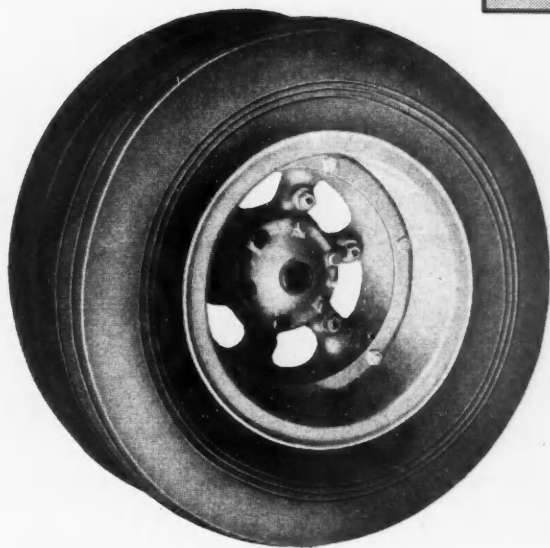
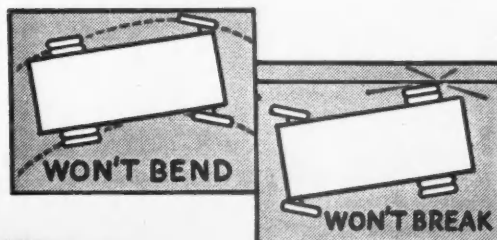
Truck and tire manufacturers agree that a speeding truck must have a cool running wheel. Brake drum heat is the result of in-

creased speed and application of brakes. The brake drum shoots forth high destructive temperatures against the inside wall of the inside tire on a dual. The tire bead weakens and soon the tire must be replaced.

Dayton Duals effectively dissipate this heat. Note, in above cut, that by forced air circulation strong currents of air are continuously whipped against the brake drum, rim and inner wall of inside tire, where heat is greatest and most destructive. Only the Dayton Design can give you such protection against heat. Tires almost always give much more than their normal mileage on Dayton Duals.

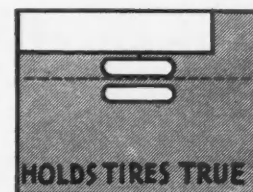
Only a tire and rim are needed as a spare with Daytons. No extra wheel necessary. Daytons will not bend or lose their positive true alignment in the fastest and toughest kind of service. No wheel repairs. The first cost of a set of Daytons is the last and only cost.

Distributors in principal cities throughout the country will give you quick, complete changeover service on Dayton Duals. Specify Daytons on your new trucks.



Dayton Brake Drums

are Superior in Strength and Wearing Qualities. The metal, made by a special process in electric furnaces, has an even distribution of graphitic carbon. Dayton Brake Drums last longer, stay smooth and save brake linings.

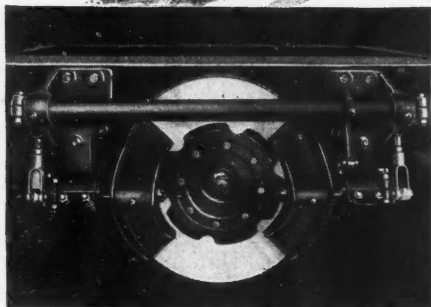
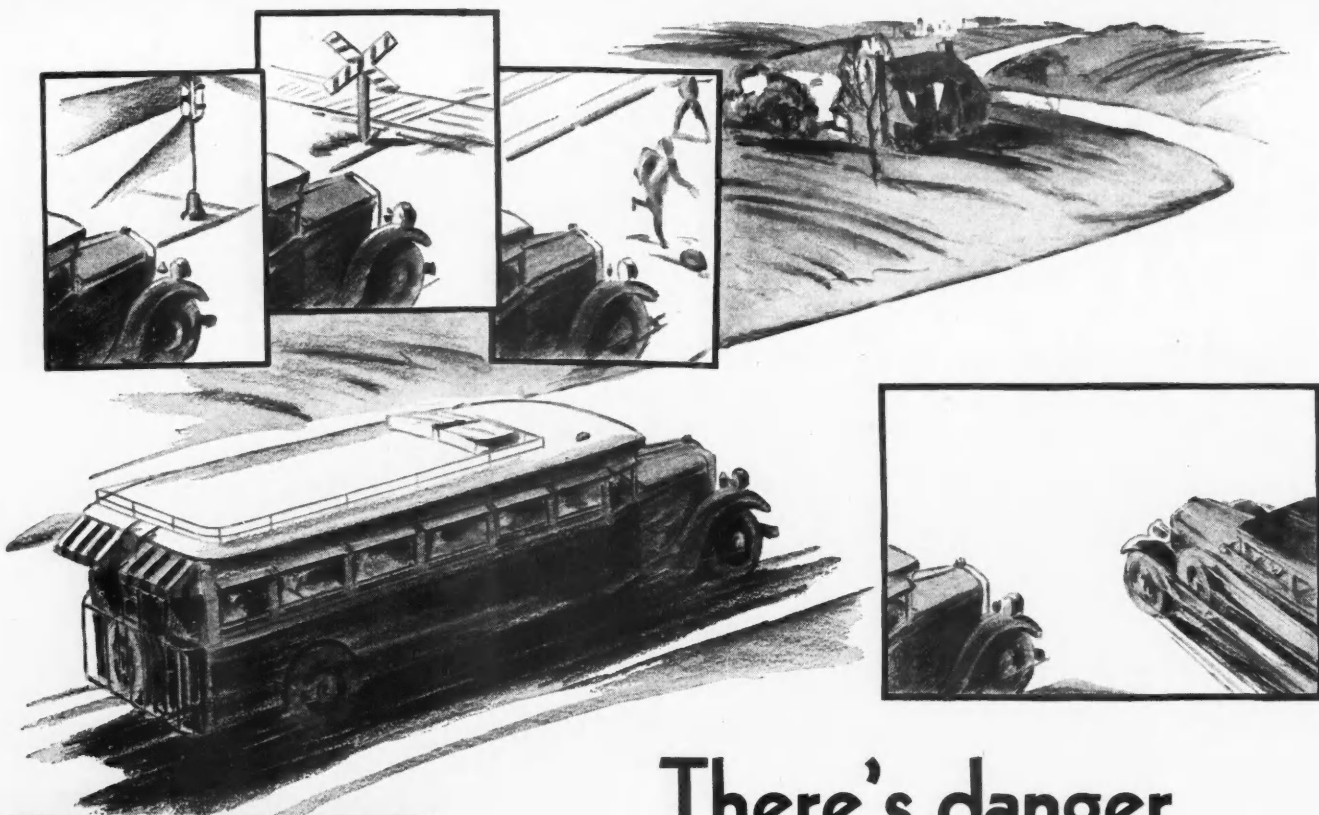


THE DAYTON STEEL FOUNDRY CO., DAYTON, OHIO

We have acquired the Tigerloy Brake Drum Division of the Massillon Steel Castings Co., of Massillon, Ohio

Dayton

The Mark of a Good Wheel



Above is an illustration of the Tru-Stop Double Shoe Brake. Single Shoe Brakes, furnished at slightly less cost, are recommended for light load trucks and buses.

Specify Tru-Stop Emergency Brake Equipment for your next bus or truck. Practically all buses and trucks have Tru-Stop Emergency Brakes as optional or standard equipment.

Old type band and drum propeller shaft brakes can be easily replaced with Tru-Stop Emergency Brakes on practically all trucks and buses.

Detailed installation instructions are furnished with every Tru-Stop Emergency Brake. Write for information, telling us the make, year and model of your truck or bus.

There's danger at every turn of the road!

A real emergency brake is the best insurance you can buy. Even the most efficient service brake needs additional help in emergency. The TRU-STOP Emergency Brake is powerful . . . it will handle the load alone, if need be. It is more than a parking brake.

Because of the compound lever system, immense braking power is possible. Four brake shoes, two on each side, squeeze a flat braking disc which is mounted at the rear of the transmission.

Your buses or trucks can carry spare shoes, which can be installed by any driver in less than half an hour. Adjustment can be made on the road, also, if necessary, in a few minutes.

In order to take up the natural lining wear, two clamping bolts and one locking bolt are loosened, and the adjusting lever moved one notch.

AMERICAN CABLE COMPANY, Inc.

Automotive Division

BRIDGEPORT, CONNECTICUT

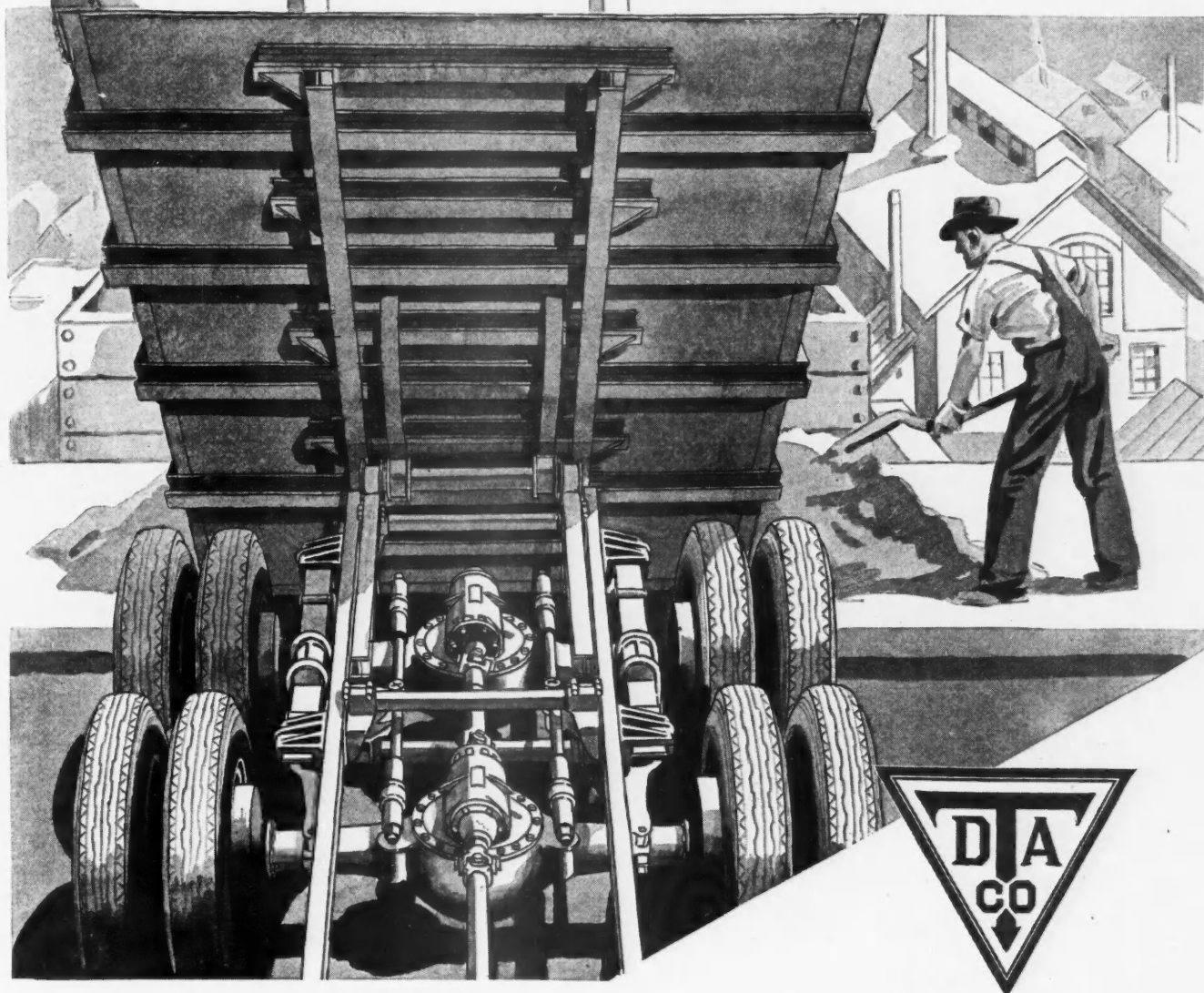
3-111 General Motors Building, Detroit, Michigan



TRU - STOP

A REAL EMERGENCY BRAKE

If ton-mile costs are important— Consider these facts



Much greater capacities. Four driving wheels. Four-wheel brakes—or even six! Greatly increased traction. Complete flexibility—self-adjusting to uneven surface of road or ground. Road shocks tremendously reduced, even under heaviest loads.

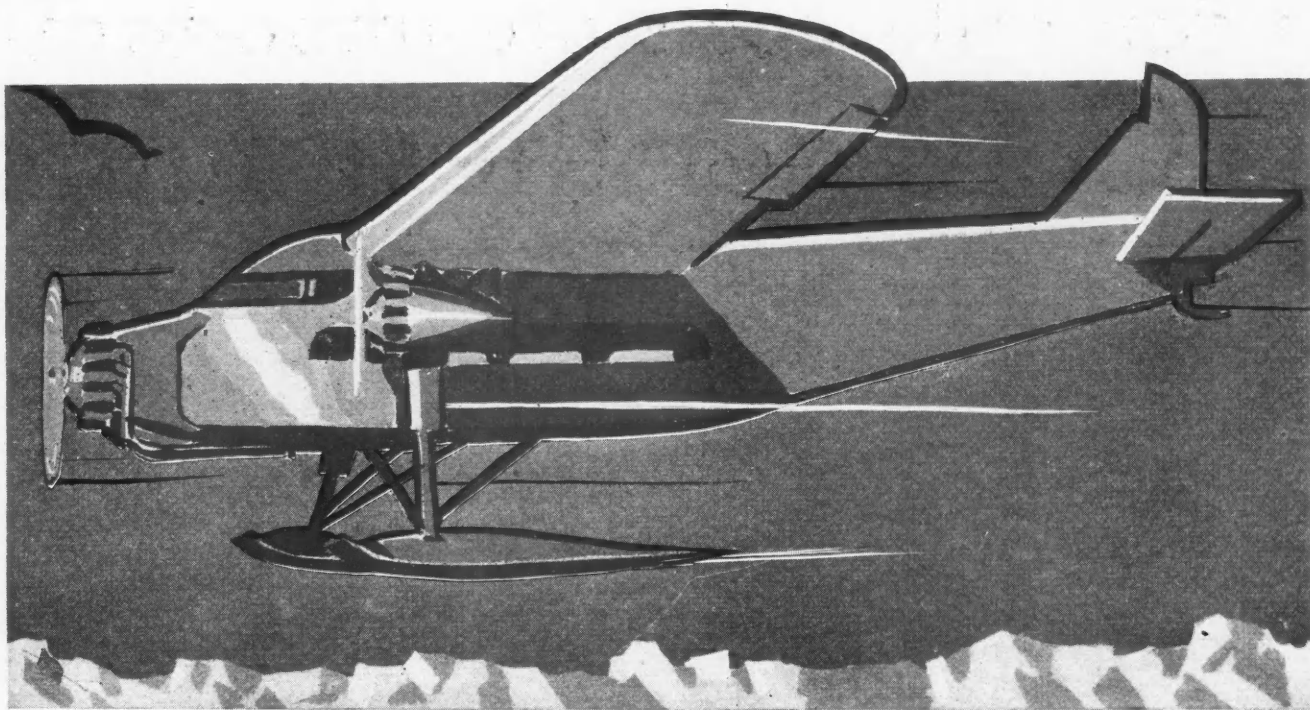
All these advantages are designed in and built into the Timken Six-Wheel Unit, with two Timken Worm Drive Axles driving in tandem.

Motor Trucks equipped with Timken Six-Wheel Units are setting remarkable records for life of equipment and low-cost hauling.

TIMKEN SIX WHEEL UNIT

THE TIMKEN-DETROIT AXLE CO.

DETROIT, MICH.



BRUBAKER TOOLS SERVED ADMIRAL BYRD AT THE SOUTH POLE

The romance of the Byrd Expedition has already been told. Unsung, perhaps are the deeds of the men who operated the machine shop, deep in the ice and snow of Little America. Inadequate by comparison with our modern machine shops, yet this unit served a mighty purpose in motor reconditioning.

It is indeed a pleasure to know that Brubaker Tools contributed their small mite to the success of this historic venture.

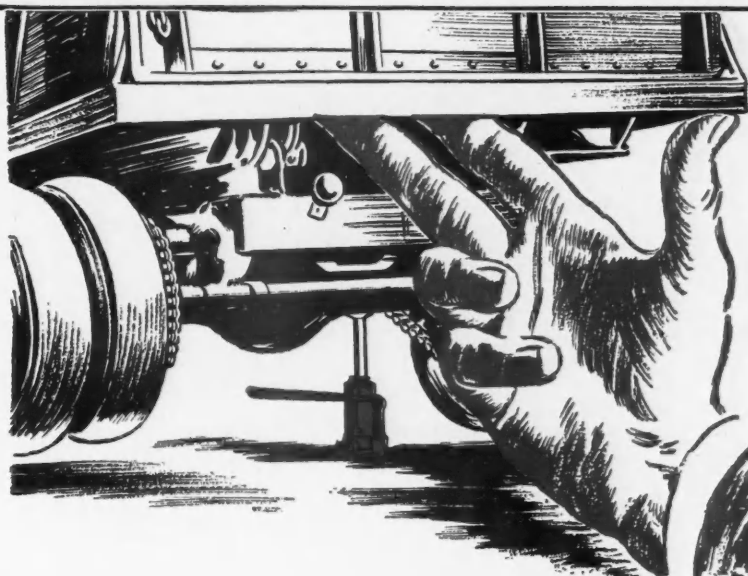
For more than 50 years, Brubaker quality Cutting Tools have served many industries. Today, Brubaker expands its service to meet fully the exacting requirements of the aviation and automotive industries.

W. L. BRUBAKER & BROS. CO.
MILLERSBURG - - - - - PENNA.



BRUBAKER

BACK - BREAKING WORK WITH A MECHANICAL JACK



Easy 1-hand lifting with a BLACKHAWK

WHAT of the thousands of dollars you have invested in trucks? What of their speed and capacity? One little nail—one flat tire—can put each truck temporarily out of business, crimp its earnings, interrupt your schedules, hold up jobs and hold down tonnage.

These losses are in direct proportion to the jack you use. Big and costly if you still equip with laborious mechanical jacks. Small and unimportant if you swing into line with the leading heavy trucks and truck fleets — and standardize on Blackhawk Hydraulics.

One hand lifting—load and all! Automatic lowering—half the job done with no effort at all! Your trucks rolling! Your drivers satisfied! Every Blackhawk Hydraulic quickly pays its cost by the time it saves. *See your dealer. Mail the coupon to us.*

BLACKHAWK MFG. COMPANY . . . Milwaukee, Wis.
Also world's largest manufacturer of socket wrenches



There's a Blackhawk for every need — 1 to 75 tons capacity — for automotive, shop, construction, and industrial work.

BLACKHAWK

HYDRAULIC JACKS



There's work for a Blackhawk Jack all over the shop — for lifting, pressing, bending, straightening jobs. Micrometer accuracy.

BLACKHAWK MFG. CO.
Dept. CO, Milwaukee, Wis.

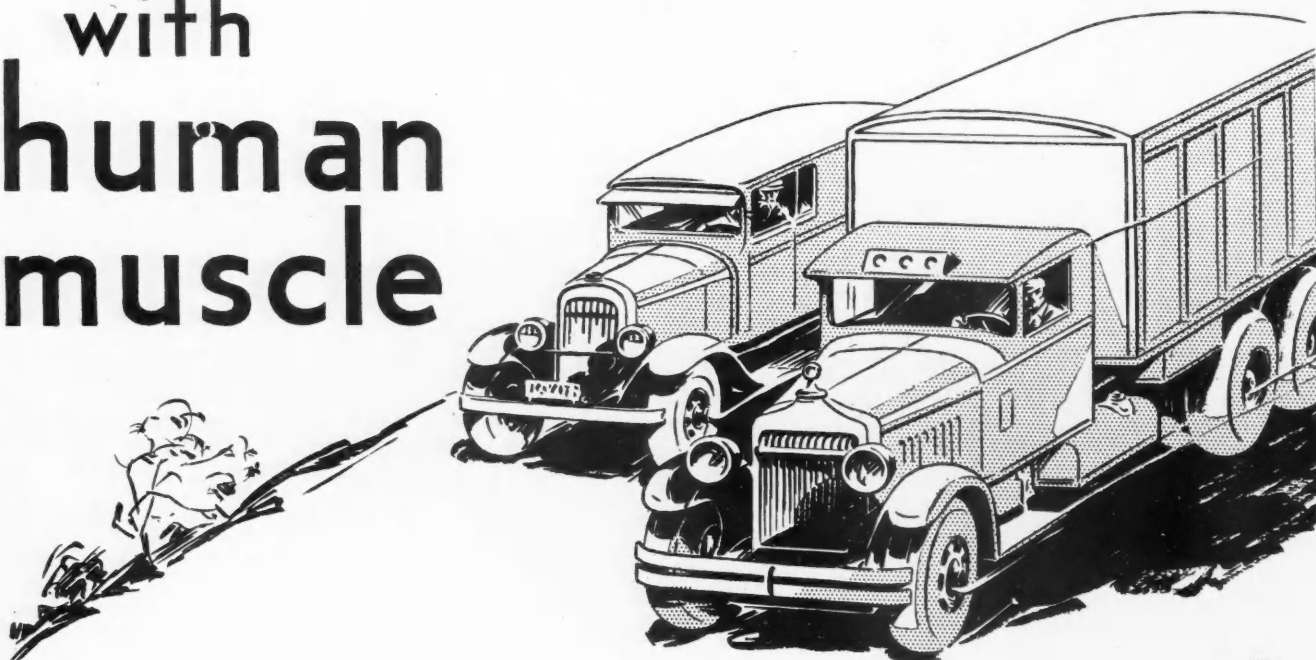
Send literature on truck
and shop jack.

☐ Include wrench folder.

Name.....

Address.....

why stop powerful trucks with human muscle



By the addition of the B-K Vacuum Brake Booster, every truck from the light delivery to the 10-ton giant can have power brakes without changing its present brake equipment.

The B-K Vacuum Brake Booster utilizes the vacuum from the intake manifold of the engine to operate the brakes.

Truck operators know the cash value of positive braking.

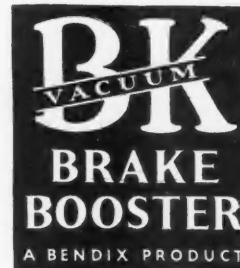
It speeds up schedules—relieves the strain on drivers—safeguards the loads and prevents liability expense.

B-K Vacuum Brake Boosters are inexpensive—can be installed in a couple of hours—and may be applied to every type of brakes.

Dealers find them quick, easy sellers. Some valuable territories for distributors still open. Write for particulars.

BRAGG-KLIESRATH CORPORATION
Queens Blvd. & Harold Ave. LONG ISLAND CITY, N. Y.

(DIVISION OF BENDIX AVIATION CORPORATION)





CALL REO IN

YOU have a trucking problem. Reo has really valuable trucking knowledge to offer — 17 years' experience in the design, manufacture and adaptation of SPEED WAGONS to practical uses.

The average Reo dealer, too, has for 12 years been fitting SPEED WAGONS to the haulage requirements of numerous local businesses.

Don't look upon the SPEED WAGON salesman as

just another man with something to sell. He has been trained to serve you wisely and intelligently. Behind him is the knowledge that wide trucking experience teaches; behind him is a Reo dealer with a reputation to safeguard — and a great factory which he must faithfully represent

In all fairness to yourself, call Reo in.

REO MOTOR CAR COMPANY, LANSING, MICH.

REO SPEED WAGON

*The Commercial Car Journal
and Operation & Maintenance*

September, 1930



**Nickel Alloy Steel Parts
in Gotfredson Trucks:**

Frames
Transmission shafts and gears
Rear axle shafts
Steering arm and knuckles
Steering knuckle pins
Worms
Piston pins
Valve tappets

(Nickel Chrome Iron in
cylinder blocks)

GOTFREDSON trucks reduce upkeep costs and breakage with NICKEL ALLOY STEEL parts...

EIGHTY-FIVE per cent of Gotfredson truck buyers during 1929 were former users. This preference, based on experience, proves that these trucks are built to endure severe abuse and to assure minimum upkeep and repair costs—features which have been obtained by the use of high strength materials. The frames, gears, shafts, steering arms and other parts are made of Nickel Alloy Steels.

The Robert Gotfredson Truck Co. states: "We are of the firm conviction that although the first cost may be affected by the use of these parts, in the final analysis this is more than offset by fewer breakages and tie-ups...that by the use of Nickel Chrome Steel frames we are

increasing the life of our truck and reducing the cost per ton mile considerably. It is a well-known fact that a frame will deflect with each jar of the road. We have found that an ordinary carbon steel frame will eventually take a permanent set or fracture at the weakest point. We have yet to know of one of our Nickel Steel frames fracturing or setting; and as this is the foundation of any truck, we feel that the additional cost is justified."

Our technical files contain a wealth of data drawn from the experience of thousands of users of Nickel Steel in the automotive field. You are invited to communicate with us regarding your specific problems in the selection of materials.

Send for List of Available Publications on Nickel and its Alloys

Nickel

FOR ALLOY STEEL

Visit our booth—10D at the 12th National Metal Exposition, Chicago—September 22-26

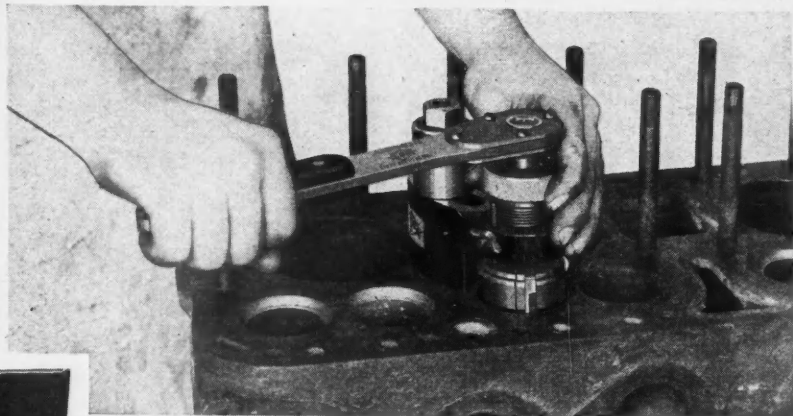


THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL STREET, NEW YORK, N. Y.



VALVE SEAT RENEWING TOOLS

CARE
WILL SAVE
YOUR CAR



No. 740.
Valve Seat Ring Tool Set. NET, complete \$79.50

SIOUX makes it *easy* to renew Valve Seats!

YOU can be sure of a neat and accurate job, when you use a Sioux Valve Ring Tool Set. An accurately cut recess and a tight drive for the valve seat ring is assured by exclusive Sioux features. The Sioux Expanding Pilot holds the cutter properly centered over the valve seat. The cutter is attached to the shank which rotates around the rigidly anchored pilot. No wobbling or traveling . . . no chance to cut recess oversize. Use Sioux Valve Seat Rings, made of special heat-resisting iron alloy—they stand the "gaff".

You can get a profitable price for valve seat renewing jobs as the car-owner is glad to save the cost of a new motor block.

Your Jobber Sells Them.

ALBERTSON & CO. INC., Sioux City, Iowa, U. S. A.

STANDARD THE



WORLD OVER



Here are 5 of a fleet of 21 dump trucks in Cleveland, all of which are equipped with Wood F-4C all-steel, hydraulic hoists of the new, improved, slant type, and Wood W-12 all-steel dump bodies of 4-yard capacity.

FLEET OWNERS SPECIFY WOOD

Those who operate fleets of dump trucks are the most critical buyers of dumping equipment. That the majority of the world's fleet owners specify Wood hoists and dump bodies is the most sincere compliment to this organization's engineering and manufacturing ability.

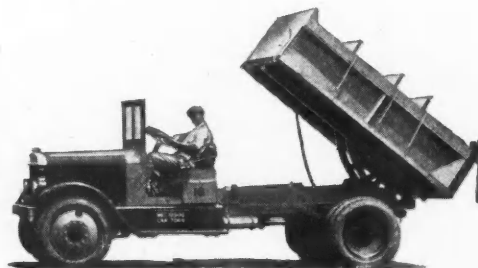
The experience of fleet operation quickly tells the worth of a hoist or body. As a result, fleet owners purchase dumping equipment, not on a basis of first cost, but on a basis of profit-producing service.

They are quick to appreciate improvements that mean greater profit from operation.

Their purchases of the new Wood improved slant type all-steel hoists, and the modern Wood all-steel dump bodies is sufficient approval of the worth of these units.

The policy of many individual-unit operators, who buy Wood dumping equipment on the strength of the fleet owner's use of it, also has shown that it is a profitable practice to be guided by their choice.

Send for illustrated bulletins describing Wood Dumping Equipment.



WOOD HYDRAULIC HOIST & BODY COMPANY
DETROIT MICHIGAN

BRANCHES AND DISTRIBUTORS IN PRINCIPAL CITIES

WOOD
HOISTS & BODIES

FLEET OWNERS CHOOSE WILLARDS *...for uniform battery quality*



A Willard-equipped fleet of ice cream trucks of the Telling Belle Vernon Company, Cleveland, O.

ECONOMICAL operation is the primary consideration of the fleet owner. That is why, in specifying fleet equipment for numerous units, the modern fleet owner looks for equipment to give him performance that is uniformly efficient, uniformly dependable. The modern fleet owner has learned that this uniformity of performance is the chief factor in operating economy.

And he finds in Willards—a uniform and unvarying high quality of construction, a constant dependability in operation. These are the sound reasons for his choice—and the reasons why so many fleet owners specify Willard batteries.

Willard STORAGE BATTERIES
CLEVELAND • OHIO
LOS ANGELES • CALIF. • TORONTO • ONT.

Truck Operating and Maintenance Costs

and their relation to the vehicles you are selling

WHEN the operator puts one of your vehicles into service, Mr. Dealer, you confidently hope that his organization, methods and experience are such that the vehicle can be expected to render the utmost efficiency.

If it doesn't perform as he expects from the standpoint of economy, it's a direct reflection upon the dealer and the product he represents.

This is invariably the case when the operator has no reliable cost-keeping system or methods.

Insure yourself against such dissatisfaction by recommending to your customers the

COMMERCIAL CAR JOURNAL *and* OPERATION & MAINTENANCE *Standard Cost System*

Thousands of operators throughout the country have installed this system—many dealers ask their customers to use it.

It is simple—but 2 forms are used—a driver's daily route and a monthly summary sheet, and the cost is but \$9.50.

The complete system consists of

500 Driver's Cards

60 Monthly Summary Sheets

1 Complete Instruction Booklet

1 Binder

Write for sample forms and details

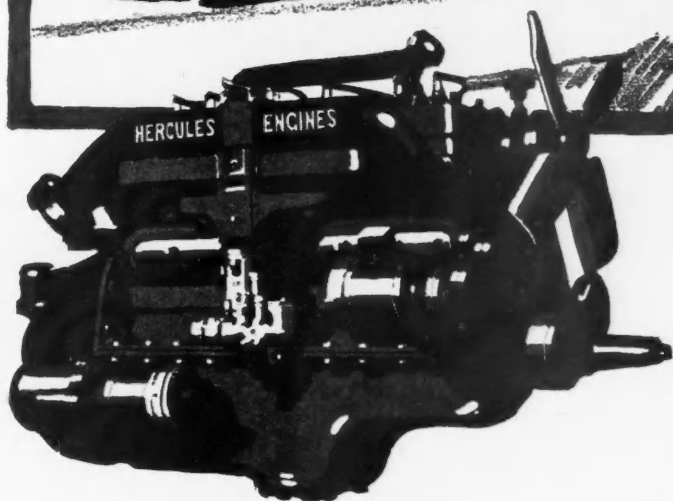
Chilton Class Journal Company

Chestnut and 56th Streets, Philadelphia



Controlled by the
United Business Publishers, Inc.

DIAMOND T AUTO CARRIER POWERED BY HERCULES



Hercules has built heavy-duty engines—and heavy-duty engines only—from the start. Today Hercules Engines are available in a complete line of Four and Six cylinder models ranging in size from 9 to 175 H.P. Many leading manufacturers of trucks and buses, both at home and abroad, have standardized on Hercules Power. Others are following.

HERCULES ENGINES

HERCULES MOTORS CORPORATION
Canton, Ohio, U. S. A.

West Coast Branch: San Francisco, Cal.

Mid-Continent Branch: Tulsa, Okla.

Eastern Branch: New York, New York

Distributors: Smith Booth-Usher Co., Los Angeles, Cal.; Edward R. Bacon, San Francisco, Cal.; F. C. Richmond Machinery Co., Salt Lake City, Utah; Warthington Machinery Corp. of Oklahoma, Tulsa, Okla.; Norvell-Wilder Supply Co., Beaumont, Tex.; Bovard & Co., Bradford, Pa. European Distributor: Automotive Products Co., London, Berlin, Vienna.

Fisher-Standard

A FULL LINE OF QUALITY MOTOR TRUCKS

NEW
PROFITABLE
FLOOR PLAN
FOR DEALERS



CAPACITY
 $\frac{3}{4}$ to 10 TONS
— ♦ —
SPECIAL BODIES

FISHER STANDARD TRUCKS ARE WORTHY OF YOUR INVESTIGATION

STANDARD MOTOR TRUCK CO.
DETROIT, MICH.

Cable Code: Fishertruk

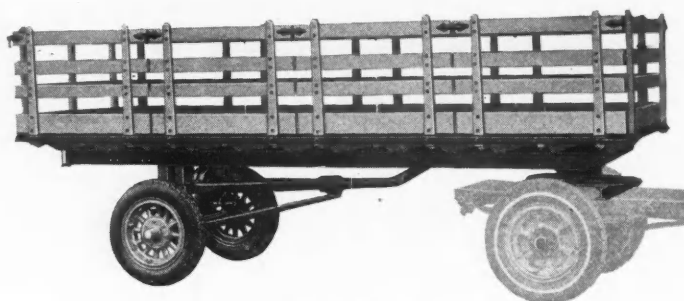
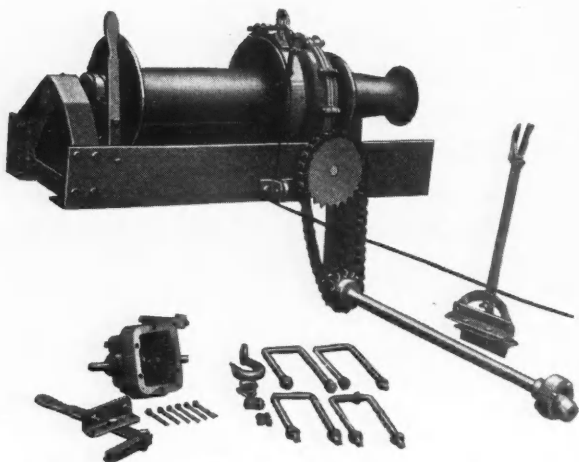
PROMOTE SALES STIMULUS

Kentucky Wagon Mfg. Company products have been the choice of industries—where economic transportation necessities are desired—since 1879. Winches, panel bodies, commercial bodies and trailers to meet the requirements of specialized vocations within the industry. Inquiries receive prompt attention.

KENTUCKY WAGON MFG. CO., INC.
Louisville, Ky.



Panel Body No. 101.
WRITE FOR CATALOG SHOWING
COMPLETE LINE OF COMMERCIAL TRUCK BODIES.



Model KT 78 trailer.
Catalog on request.

“ECONOMIC TRANSPORTATION NECESSITIES SINCE 1879”

Important Links



— — — — —
Blood Joints are the important links in the power transmission of some of the most carefully designed trucks built because they insure the utmost in durable, trouble-proof performance.

Although invented at a time when the automotive industry was in its infancy, the original principles of design have proven so satisfactory that in twenty-six years such changes as have been made have been confined to the minor details and refinements suggested by experience. We feel justly proud of this record which indicates a design of outstanding merit.

— — — — —

— — — — —
Years of wear will necessitate the replacement of but a few simple, inexpensive parts which Blood design makes it quick and easy to install.

— — — — —

**BLOOD-BROTHERS
MACHINE COMPANY
ALLEGAN, MICH.**

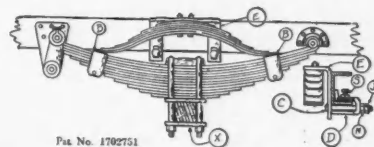
Springs For All Cars and Trucks



No matter what car, truck, bus or trailer it may be—there's a Trainor Spring for the job—to do a better job!

38 years of practical spring experience enables Trainor to produce springs that fit and give long service.

TRAINOR OVERLOAD SPRINGS Safe-T-Springs

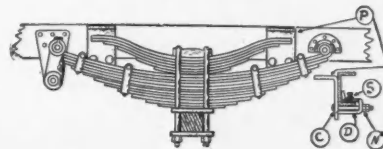


Pat. No. 1792751

Trainor Safe-T-Springs are the "extra-ton-profit" springs. They enable the truck owner to put an extra profit-ton on every load that leaves his yards.

They eliminate side-sway, level the load and gently take up sudden jars and jolts that so often cause spring breakage.

Helper Springs



Trainor Helper Springs are auxiliary springs that level the load when truck is overloaded. They are easy to install, with no holes to drill. They clamp on to the frame and will not come off.

TRAINOR
National Spring Co.
Newcastle, Indiana

Trainor National Spring Co.
Newcastle, Ind.

Please send illustrated literature describing Trainor Springs.

Name.....

Address.....

City..... State.....

ATTERBURY

DELIVERING SERVICE OVER THE COPPER HIGHWAYS

In the truck business, the name of the user is as important as the name of the manufacturer. The Tonawanda Power Co., a division of the famous Niagara-Hudson network, is another representative user who depends on Atterbury trucks.

Twenty-seven years of experience are built into the line of 1 to 5 ton Atterbury Sixes. The 1930 specifications are worth writing for.

ATTERBURY MOTOR CAR CO.
Elmwood Avenue at Hertel, Buffalo, N. Y.



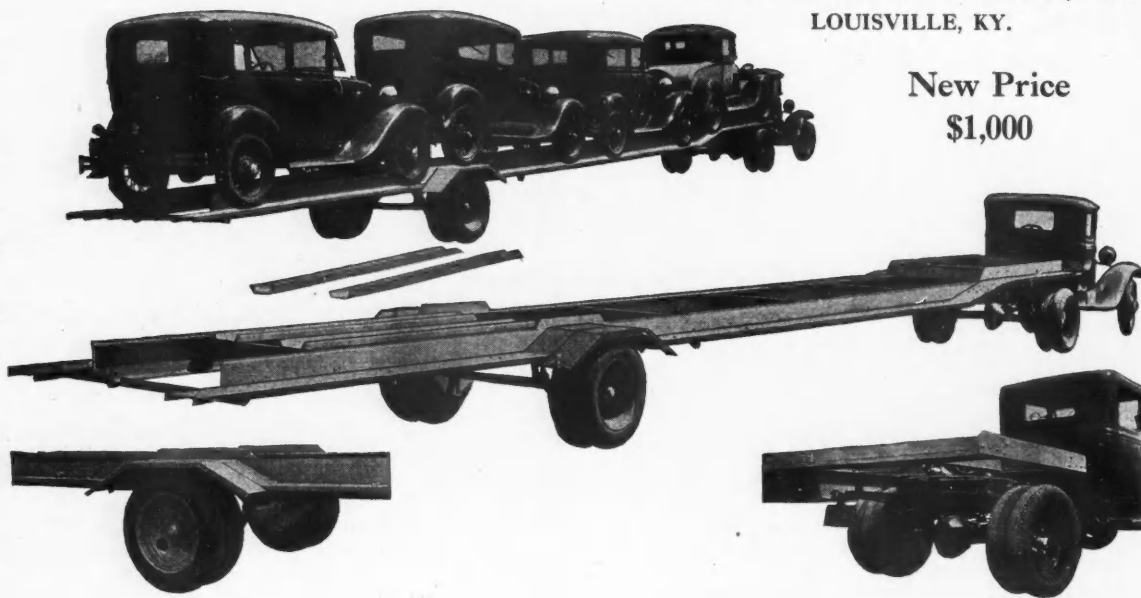
*You'll Enjoy Doing Business With ATTERBURY,
America's Oldest Exclusive Truck Manufacturer*

NEW KINGHAM TRANSPORT TRAILER

See the new Kingham Transport Trailer before you purchase additional equipment. More advantages — more profit possibilities — with the new Kingham Trailer. Lower loading height but higher road clearance. Tracks are made in such a way that they can carry any make car with either single or dual tires. Standard width tread with fenders built in. Lights and skids furnished as regular equipment. Kingham sets the pace in design, capacity and price. Kingham Transport Trailers will meet your exact hauling requirements. Ask for catalog on this new unit and other similar leaders.

KINGHAM TRAILER CO., Inc.
LOUISVILLE, KY.

**New Price
\$1,000**



WILLIAMS SUPERIOR DROP-FORGED TOOL SOCKET WRENCHES



Chrome-
Plated
Finish



A Complete NEW
line of wrenches
in four patterns—

“BANTAM”
“STANDARD”
“HEAVY DUTY”
“EXTRA
HEAVY DUTY”

for automotive
and industrial
use.

Ask for catalog.

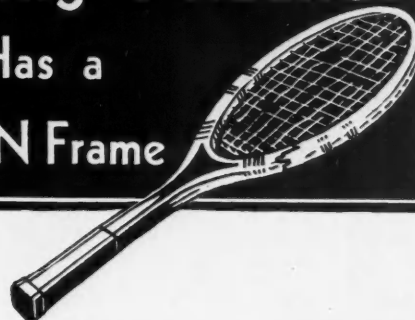
All Are Guaranteed
Against Breakage.

J. H. WILLIAMS & CO.

“The Wrench People”

New York BUFFALO Chicago

You Wouldn't Re-string a Racket That Has a BROKEN Frame



THE finest job of restringing cannot make a tennis racket serviceable if the frame is cracked.

The finest piston rings cannot cure oil pumping, “blow-by”, knocking and other motor troubles if the pistons and pins are worn or the cylinder walls scored.

The best and safest way in order to avoid breakdowns on the roads and long “lay ups” of costly trucks is a thorough reconditioning.

Regind the cylinders and replace worn pistons and pins with Arrow Heads. You can do a good job quickly and at moderate cost. Greater accuracy minimizes machining. Arrow Head's advanced and scientific manufacturing methods insure extra mileage and smooth, dependable performance. Available in Grey Iron or Aluminum Alloy—also if desired, in balanced and fitted sets of pistons and electrically heat-treated pins, ready to slip into place. Latest catalog and name of nearest jobber on request.



Quick service on the 5,000 most-called-for fits and applications, including practically “all motors, all years, all models.”

3 regional plants to serve you
CHICAGO—MINNEAPOLIS—BUFFALO

Supported by a national chain of service warehouses

ARROW HEAD STEEL PRODUCTS COMPANY

Chicago MINNEAPOLIS, MINN. New York

Atlanta Boston Buffalo Dallas Kansas City
Los Angeles San Francisco

Canadian Warehouse: 277 William St., Chatham, Ontario
JOBBER'S STOCKS IN ALL LEADING CITIES

ARROW HEAD

♣ Pistons Fitted With Pins ♣

TWO Lubricants Are Better Than One



Dixon's 677 Gives This Double Protection

If the same care in selecting the lubricant for transmissions and differentials was employed as for engines there would be less necessity for those expensive major overhauls of these heavy duty parts.

There's never any question about lubrication when Dixon's 677 is used. Its two lubricants . . . a film of graphite and a film of grease . . . constantly flow giving double protection against friction and wear.

Dixon's 677 is unaffected by weather conditions. It will not run . . . it will not channel. It clings to the gears. Change over to Dixon's 677 before cold weather sets in.

JOSEPH DIXON CRUCIBLE CO.
JERSEY CITY, N. J.

DIXON'S

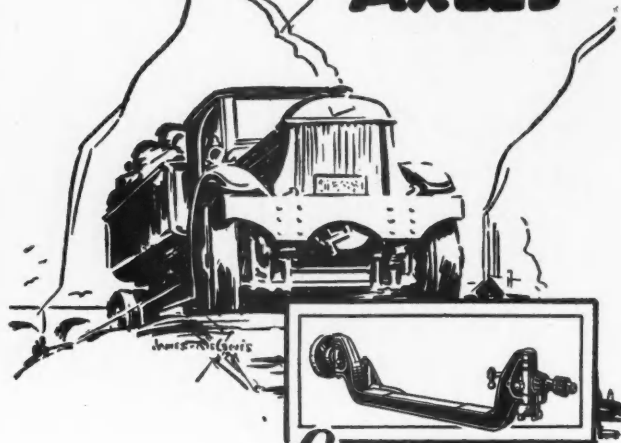
677

Graphited
Grease

September, 1930

SHULER

FRONT AXLES



for **TRUCKS**

Tractors and Trailers

UNIFIED..

A unified concern directing all its energies upon doing one thing well, namely—the manufacture of a Quality Front Axle.

FRONT AXLES ONLY

SHULER AXLE CO.
INCORPORATED
LOUISVILLE KENTUCKY

The Commercial Car Journal
and Operation & Maintenance

"Handy Governors Have kept our trucks out of the repair shop"



"In studying our delivery problem, we found that excessive truck repair costs and accidents were due entirely to too much speed. We installed Handy Governors on three of our trucks as an experiment. After watching these trucks for several months, we ordered Handy Governors installed on our whole fleet. These Governors have reduced our truck maintenance costs, they have kept our trucks out of the repair shop, and they have reduced our truck accidents to a minimum. Our salesmen have still been able to make deliveries on schedule."

ALBERT GORDON
for Gordon Bread Company

Los Angeles, Cal., April 3, 1930.

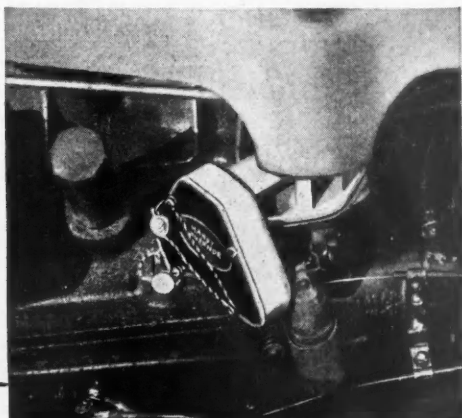
Steadily the evidence accumulates. Handy Governors ARE cutting delivery costs for the baking industry. They DO keep trucks out of the repair shop, and running sweetly on the job. THEY DO INCREASE OWNER PROFITS.

President Gordon's own story of the Gordon Bread Company's Handy Governor experience needs no elaboration. Read it. Ponder it. Remember that every day a truck spends in the shop costs you more than the Handy Governor that would have kept it at work.

And don't overlook Mr. Gordon's closing paragraph. Surprising though it may be, high speed actually retards deliveries. Governed speed expedites them. Especially is this true of Ford and Chevrolet fleets.

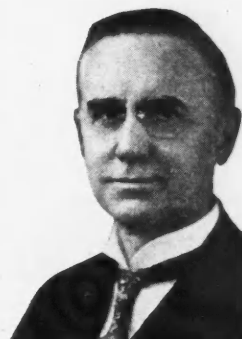
Let us put you in touch with a nearby distributor. He will tell you the whole story.

HANDY GOVERNOR CORPORATION
3929 West Fort Street Detroit, Michigan



*The Commercial Car Journal
and Operation & Maintenance*

A Message
from
B. A. Gramm



MR. B. A. GRAMM
President and Treasurer
Gramm Motors, Inc.,
Delphos, Ohio

Dean of the
Motor Truck
Industry

INTEGRITY

To my mind, one of the greatest pleasures in life is the realization of a worthwhile task well done.

Integrity has been the watchword during my thirty years of engineering experience in motor truck building.

As a Thirtieth Anniversary achievement it is most fitting that we should offer the buying public the fruits of these years of labor by giving them the best in Motor Trucks that money can buy.

Highest standards of workmanship are embodied in all Gramm trucks—which explains their long life, sturdy performance and low operating cost.

Each chassis admirably sustains the Gramm slogan:

**"POWERFUL AND FAST
BUILT TO LAST!"**

GRAMM MOTORS, Inc.

Builders of fine Motor Trucks, Vans and Coaches
DELPHOS, OHIO, U. S. A.

EXPORT

Willys-Export
Corporation

Toledo, Ohio, U.S.A.

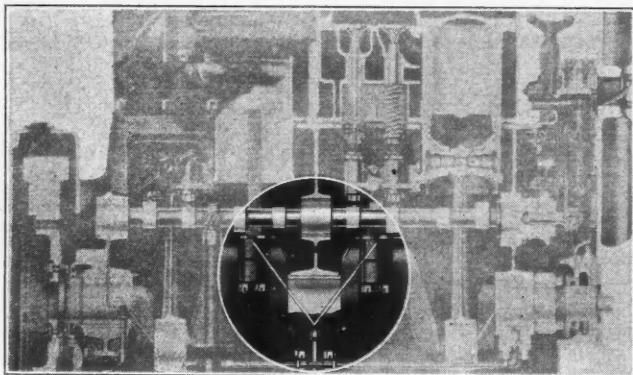


EXPORT

Willys-Overland
Crossley, Ltd.

Stockport, England

September, 1930



Waukesha had a Bearing Idea!

They designed an engine to take an extra large *overstrong* center bearing . . . a bearing to stand the drive from adjacent pistons, to stand up under the double load, as compared to the other bearings.

That Waukesha engineers gave intensive study to bearings . . . load, wear, stress and strain . . . and then placed their bearing orders with Federal-Mogul, tells a big story about Federal-Mogul.

The more closely an engineer studies bearings, bushings, and bearing metals, the more certain he is to come to Federal-Mogul, for he receives by all odds the best engineering cooperation, the best execution of his designs, and the most reliable source of supply. That Federal-Mogul is the outstanding choice of scores of engineers as standard equipment is unquestioned evidence that it pays to replace with Federal-Mogul.



The Complete Federal-Mogul Replacement Line

Laminum Shims
Bronze-Back,
Babbitt-Lined, and Die-Cast
Connecting Rod and Main Bearings
(Standard and Undersize)
Piston Pin Bushings

Connecting Rod Bolts and Nuts
Bearing Anchor Screws
Bronze Bars and Babbitt Metals
Shoemaker Rebabbiting and
Line Boring Equipment



**Mogul
FEDERAL**



*"Standard Equipment on Most
Automotive Vehicles Since 1899"*

FEDERAL-MOGUL CORPORATION
DETROIT MICHIGAN

September, 1930

Hand This to the Next Customer You See . .

Let Me Suggest—

THE most economical cost system I know of. Other motor fleet owners and operators have tried it at my suggestion, and say it is fine.

The Commercial Car Journal and Operation & Maintenance Standard Cost System is a simple, convenient and inexpensive method of keeping close tabs on your trucks and drivers.

It costs only \$9.50 for 500 Driver's Cards, 60 Monthly Summary Sheets, 1 complete Instruction Book and 1 Binder.

I don't get a cent out of it, but if it makes more money for you, that should mean better business for me. I'm glad to pass along the idea.

The address is:

**Chilton Class Journal
Company**

Chestnut and 56th Sts.

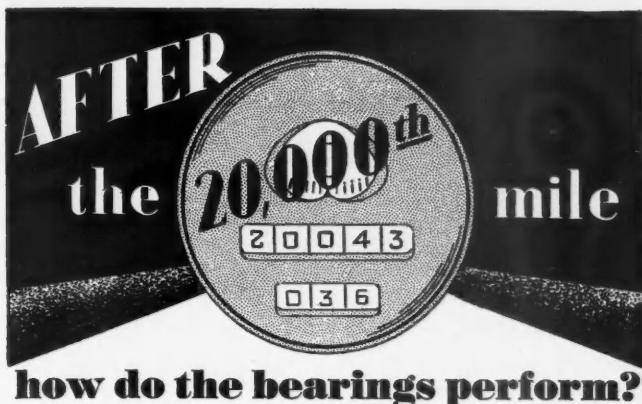
Philadelphia

Your Dealer



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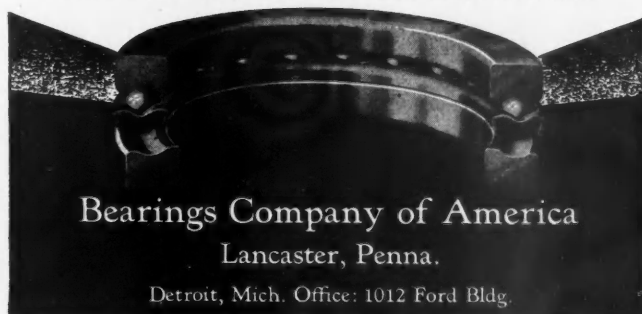
*The Commercial Car Journal
and Operation & Maintenance*



how do the bearings perform?

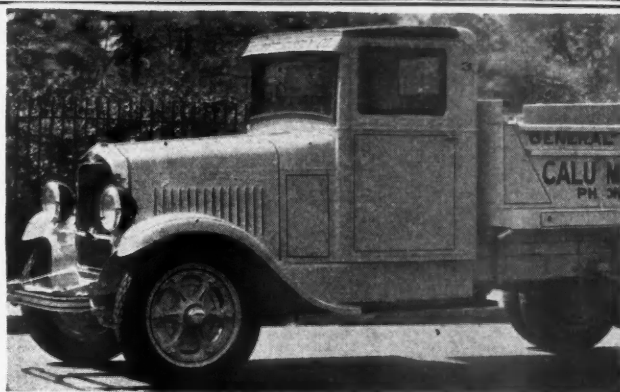
Not when they leave your salesroom, new and shining, but after a year or two of driving through summer heat and winter snows—THEN how do the bearings perform?

B. C. A. Bearings in cars you sell assure you and your customers of *continued* unailing, smooth and quiet performance throughout miles and years. They guarantee longer life and higher resale values, which in turn mean better acceptance and easier sales for new cars.



Bearings Company of America
Lancaster, Penna.

Detroit, Mich. Office: 1012 Ford Bldg.



Meeting Today's Needs HIGHLAND COUPE CAB

Utmost comfort for the driver under all weather and road conditions.

Smart appearance that helps to build prestige for business.

Long Life of Dependable Service—due to many extra features and the exclusive Rocker Sill Mounting.

These are a few of the advantages that are assured when HIGHLAND Coupe Cabs are specified—advantages that make these nationally famous cabs sell more readily.

HIGHLAND Cabs fit every make of Motor Truck. Write for complete details, specifications and prices. No obligation.

THE HIGHLAND BODY MFG. CO.
403 Elmwood Place Cincinnati, Ohio

The Commercial Car Journal
and Operation & Maintenance

The Servis Recorder

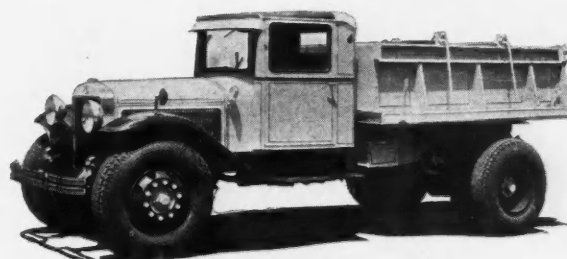
— it keeps 'em ALL busy!

SOME job, isn't it, for a Recorder that only weighs a little more than a pound. Although it points out delays, its job is not to "detect", but rather to *prevent*. It keeps men and machines from getting into bad habits. It keeps down disputes — and where there are disputes, it's the umpire.

American business has accepted the Servis Recorder.

Write for Booklet

THE SERVICE RECORDER COMPANY
CLEVELAND - OHIO - U.S.A.

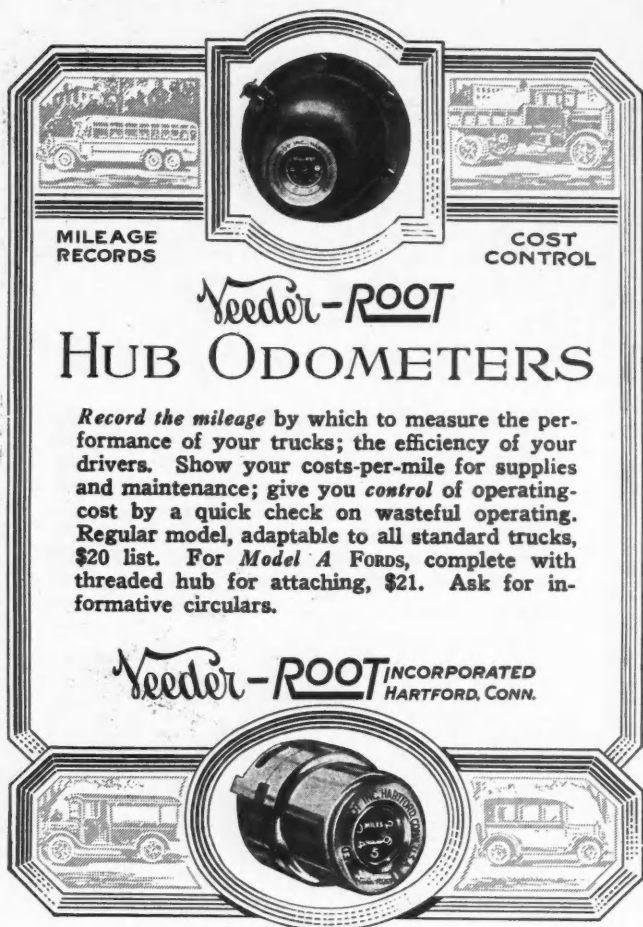


The Extra Value Buyers Want New SCHACHT De Luxe Series

Modern trucks to meet modern conditions! That describes the new SCHACHT De Luxe Models. They have the snap, the power, the speed, the smart appearance, the complete equipment that today's buyer looks for. In price and service they give the extra value that brings sales. The SCHACHT De Luxe line is complete—capacities $1\frac{1}{2}$ to $7\frac{1}{2}$ tons. Wire or write for details.

The LeBlond-Schacht Truck Company
8th and Evans Streets, Cincinnati, Ohio
Successful Manufacturers for over 20 years.

September, 1930



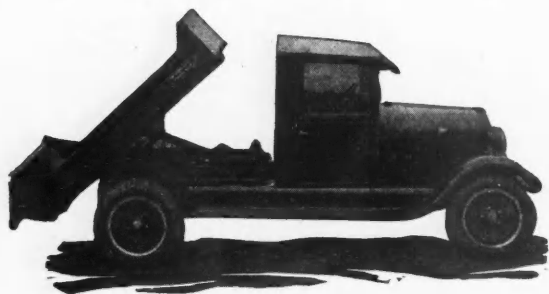
MILEAGE RECORDS

COST CONTROL

Veeder-ROOT HUB ODOMETERS

Record the mileage by which to measure the performance of your trucks; the efficiency of your drivers. Show your costs-per-mile for supplies and maintenance; give you control of operating-cost by a quick check on wasteful operating. Regular model, adaptable to all standard trucks, \$20 list. For Model A Fords, complete with threaded hub for attaching, \$21. Ask for informative circulars.

Veeder-ROOT INCORPORATED
HARTFORD, CONN.

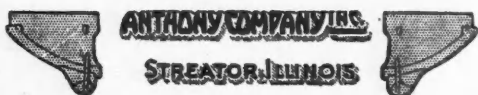


ANTHONY ROTATING POWER HOIST DUMP BODIES...

more satisfaction

When thousands of users agree on the merits . . . when thousands of users send repeat orders . . . when thousands of users have spent not a penny on repair parts . . . you will agree that here indeed is "more satisfaction".

Your inquiry is solicited.




Reduce your hauling costs

The powerful Hou-dailles definitely increase ton miles by "pulling the teeth" of the shock spots—saving the load, chassis, springs, axles and tires.

Let us tell you how other fleet operators have cut costs.

HOUDAILLE
PRONOUNCED "HOO-DY-E"
SHOCK ABSORBER

Houde Engineering Corporation
BUFFALO, N. Y.

A DIVISION OF **HOUDAILLE-HERSHEY CORPORATION**
Pioneers and World's Largest Producers of Hydraulic Double Acting Shock Absorbers

Suggest to Your Next Customer That He Use the—

Commercial Car Journal and Operation & Maintenance Standard Cost System. A simple, convenient and inexpensive method of keeping close tabs on trucks and drivers.

It costs only \$9.50 for 500 Driver's Cards, 60 Monthly Summary Sheets, 1 Complete Instruction Book, 1 Binder.

**CHILTON CLASS JOURNAL
COMPANY**

Chestnut and
56th Sts.



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NEVER A SHIPMENT DELAYED—



Titeflex Gasoline Line
showing braid, inner
tube and S.A.E. Union
Coupling.

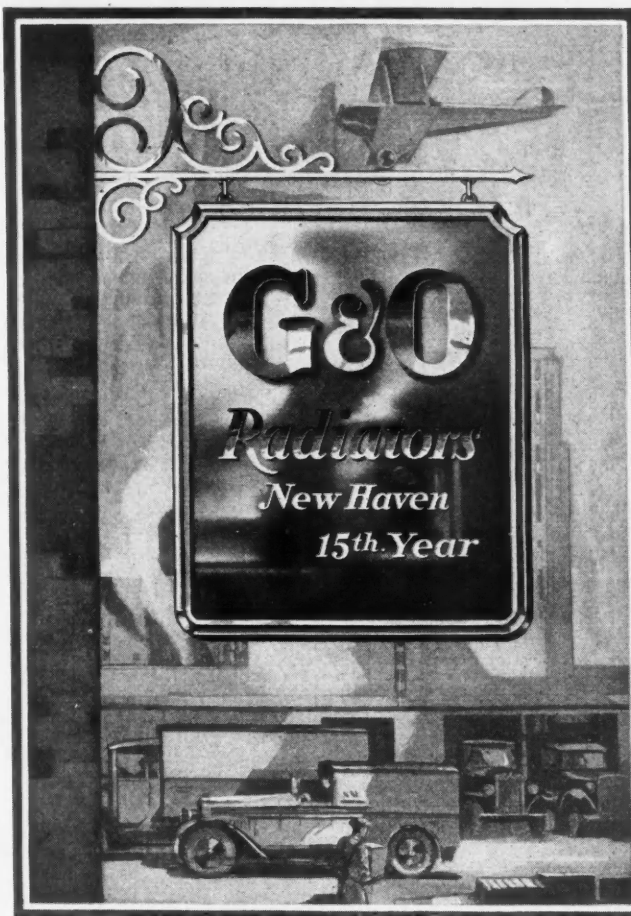
—because of a broken fuel line. Trucks and buses equipped with Titeflex oil and gas lines never lose a minute—no matter how rough the going—because of broken fuel lines.

Titeflex flexible fuel lines absorb vibration. They never crystallize. They never break. They are all-metal with no rubber or fabric to make them tight. Their flexibility makes them easy to install. With fittings attached they are a complete replacement unit.

Fleet Owners, your gas
and oil lines need never
fail—Titeflex lines don't
—Write for catalog.

Titeflex
REG. U.S. PAT. OFF.

TITEFLEX METAL HOSE CO.
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NEWARK, N. J.



The G & O Manufacturing Co., New Haven, Conn.

**SPECIALLY
DESIGNED FOR
HEAVY DUTY
SERVICE**



VICTOR
MADE IN U.S.A.
GASKETS
The World's
Standard Gasket

VICTOR MFG. & GASKET CO.
5750 Roosevelt Road .. Chicago
WORLD'S LARGEST GASKET MANUFACTURER

INCREASE SALES VOLUME SECURE REPEAT ORDERS

A progressive dealer is not only attracted by a handsome profit to sell dump body equipment, but also by the minimum amount of servicing to keep the bodies on the job. Often an enticing margin is completely consumed by service charges. Consequently, this is not so profitable.

Galion Allsteel Dump Bodies are beyond the experimental stages. They serve efficiently and indefinitely. Sell them to your customers—repeat orders will follow. Get the facts for your 1930 program.

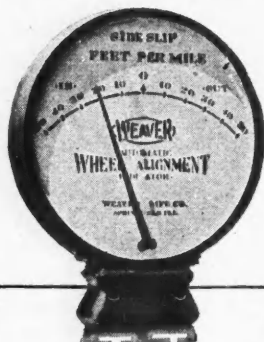
WRITE FOR FACTS

THE GALION ALLSTEEL BODY CO.
Box 5, GALION, OHIO

GALION
ALLSTEEL BODIES

Reduce Operating Costs

with a **WEAVER** automatic
WHEEL ALIGNMENT INDICATOR



Detects Road Friction

To determine the degree of road friction the car is simply driven over the Indicator. The big hand on the large dial, directly in the driver's line of vision, instantly indicates the number of feet side slip per mile due to the wheels being in or out. After the front wheels leave the Indicator plates, plates and hand automatically return to zero, ready to test rear wheels or the next car.

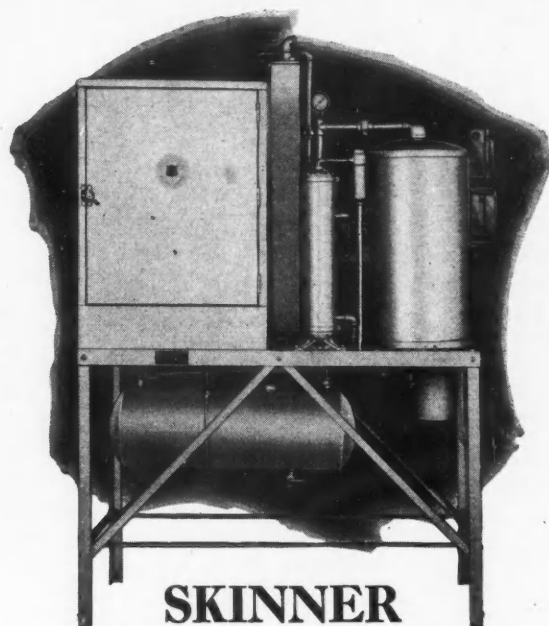
Effect a substantial saving in tires, gas and oil—and minimize danger due to steering troubles by using a Weaver Automatic Wheel Alignment Indicator.

Lies flat. Is easily installed. Can be placed anywhere it is convenient for drivers to make their own tests by driving over tester every day. A bell rings if wheels are out of alignment, thus indicating the need for wheels to be corrected.

Ask your Jobber Salesman or write us for details.

**WEAVER
MANUFACTURING
COMPANY**

SPRINGFIELD, ILLINOIS, U.S.A.
Weaver Canadian Co., Ltd. Chatham, Ontario



SKINNER OIL RECLAIMER

FOR
BEST LUBRICATION
AT
LOWEST FLEET OPERATION
COST

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DO YOU WANT THIS BOOK?

Now ready—a book of Average Motor Truck and Trailer Costs. Filled with figures that haulers find helpful in reducing their Overhead Costs. Unusually complete and right up to date. Write us for your copy—no obligation.

FRUEHAUF TRAILER COMPANY

10957 Harper Ave.
DETROIT MICHIGAN

Commercial Car Journal and Operation & Maintenance Standard Cost System

The Commercial Car Journal & Operation and Maintenance Standard Cost System is a simple, convenient and inexpensive method of keeping close tabs on trucks and drivers.

It costs only \$9.50 for 500 Driver's Cards, 60 Monthly Summary Sheets, 1 Complete Instruction Book, 1 Binder.

**CHILTON CLASS JOURNAL
COMPANY**

Chestnut and
56th Sts.



Philadelphia
Penna.



It's FREE

How much would you pay for one idea that would lower the operating cost of your trucks? This U. S. book is full of such ideas, each a practical, helpful suggestion on operating your shop on a more profitable basis. And it's free for the asking. You'll naturally want to use U. S. tools to put these labor saving ideas into effect. Ask for a catalog when you ask for the book.



**UNITED STATES
ELECTRICAL TOOL CO.**
2455 W. 6th St.
Cincinnati, Ohio



Specialized Design



WHEN you buy a Hug Roadbuilder you buy a truck that does the job of building roads to perfection at the lowest operating cost. You don't buy a conventional chassis altered into a roadbuilding truck. Hug success is the result of specialized design. Each unit used in the construction of the Hug Roadbuilder is selected because it is best adapted to do a specialized type of work most efficiently. Hug specialization means a sturdier Roadbuilder at the right price.

Distributors capitalize on Hug specialized features of design. Desirable territory open for responsible distributors and dealers. Liberal floor plan and service parts arrangements.

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THE HUG COMPANY, Highland, Illinois

*The Commercial Car Journal
and Operation & Maintenance*



UNBREAKABLE TAIL LAMP

Unbreakable—Made of rubber, bends instead of breaking.

Water Proof—Rubber is the best insulation, also proof against water.

Bright Light—Due to special unbreakable lens.

Vibration—No effect on electric bulb because it is hung loose in lamp, is surrounded by rubber and cushioned by a light spring.

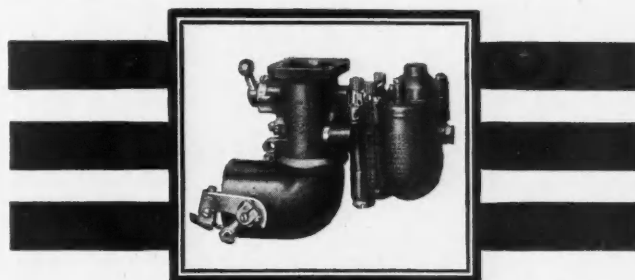
Guaranteed—Unbreakable.

Price \$5.00

BULL TAIL LAMP

PATENTED

CHAMPION RUBBER LAMP CO., INC., 236 W. 55th, New York City



WINFIELD CARBURETORS *will save you money*

FLEET OWNERS have found that a Winfield Carburetor positively does increase the gas mileage. The saving in gas will make this carburetor a profitable investment. It quickly pays for itself.

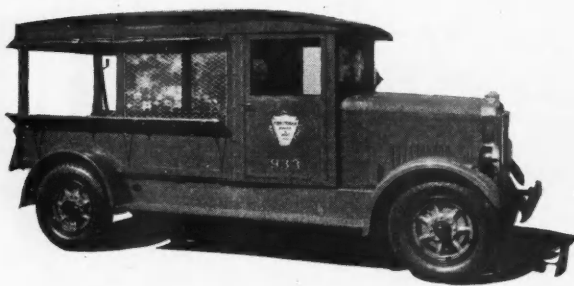
* A Winfield also delivers increased power...makes the motor run smoother...does not load up...starts easier...idles better...and does not dilute the oil.

* Get the facts on what this carburetor can do for you. You have nothing to lose and much to gain.

WINFIELD CARBURETOR CO., Ltd.

1900 E. Jefferson Avenue
DETROIT, MICH.

3053 Treadwell Street
LOS ANGELES, CALIF.



In-Built Quality—

For permanent consumer satisfaction nothing can take the place of In-Built Quality. It's the trump card that Dealers hold when they handle Selden Hahn trucks. The keener the competition the more important quality becomes and this in-built factor is benefiting Selden Hahn Dealers every day.

Selden Hahn understands the problems of the Dealer. It has provided him, first with a quality truck that enables him to outpoint competition and second with a dealer plan that is a real profit opportunity.

*Ask for information on the Selden
Hahn franchise*

SELDEN HAHN
MOTOR TRUCK CORPORATION
ALLENTOWN, PENNA.



Recorder 5 1/4"

TETCO
I.I.M.

This chart is an actual reproduction of a trip made by a moving van from Philadelphia to Chicago and return. Heavy line indicates operating time. Light line idle time.

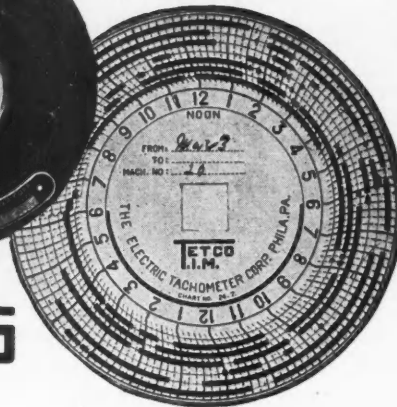


Chart 4 1/4" Diam.

GUESSWORK DOESN'T PAY

TETCO T. I. M. gives you the facts—no more—no less—on truck operation. It is a real dollars and cents help to your transportation department in determining operating cost for each unit. A seven-day recording device with easy, quick, day by day comparison. Change from one day to next made automatically. The most efficient, useful and economical time recorder on the market.

TETCO T.I.M. SEVEN-DAY RECORDER with a year's supply of charts, \$40.00. Write for quantity discount. Distributors write for proposition.

The Electric Tachometer Corporation
Broad and Spring Garden Sts.
Philadelphia Penna.

Commercial Car Journal and Operation & Maintenance Truck Specifications ARE CORRECTED MONTHLY

You can depend on the information they contain as being accurate and up-to-the-minute. Use them to sell and use them to service.



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United Business Publishers, Inc.

Here's Big Money for Hustlers

A lifetime opportunity made to your order. Act as distributor for the fast-selling Lapeer and Trailmobile automatic and manual semi-trailers, four-wheel trailers, pole and drag trailers, manufactured by pioneers in the rapidly growing trailer industry. A better trailer for every purpose. Adopted by prominent concerns in the country's leading industries. Over 330 large fleet owners. Satisfactory profits. Good territory still available for hustlers. Investigate now. Write or wire for full particulars.

The Trailmobile Company

General Sales Office

31st & Robertson Aves., Oakley, Cincinnati, Ohio

HOOPES WHEELS

HOOPES

WOOD SPOKE METAL FELLOE
WHEELS

For Use with Single and Dual Solid Tires



HOOPES-PARKER

HUB INTEGRAL MALLEABLE
WHEELS

For Use with Single and Dual Pneumatic Tires

1867

Hoopes, Bro. & Darlington, Inc.
WEST CHESTER, PA.

1930



EISEMANN

An Efficient, Reliable Ignition System
—independent of storage battery—
for MOTOR TRUCKS
and BUSES





EISEMANN MAGNETO CORPORATION—60 E. 42nd Street—NEW YORK



**When you apply the mathematics
of value, Mather Springs are the
logical choice.**

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Manufacturers of Scientifically Heat Treated Automobile Springs

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THE ZENITH UNIVERSAL

The Zenith Universal Carburetor embodies many combined features necessary for efficient operation of trucks, buses and industrial equipment, and advisable for passenger car equipment.

Its automatic accelerating and economizing feature insures maximum power when needed, and marked economy of operation.

Its float arrangement enables it to function perfectly up and down steep hills, in and out of excavations, etc.

It is fully balanced so that efficient air cleaning devices may

be fitted without danger of crankcase dilution.

Its spring loaded strangler insures easy starting and continued running in the coldest weather.

Its stainless steel parts insure long life and no corrosion in vital moving parts.

Its heavy construction makes it durable under the hardest conditions of use.

It is easy to clean and to service.

It can be supplied with or without an adjustment.

It can be sold at an attractive price.

Full details on request.

ZENITH-DETROIT CORPORATION

MANUFACTURERS OF ZENITH CARBURETORS AND FILTERS

DETROIT

Member Motor Truck Industries, Inc., of America

MICHIGAN

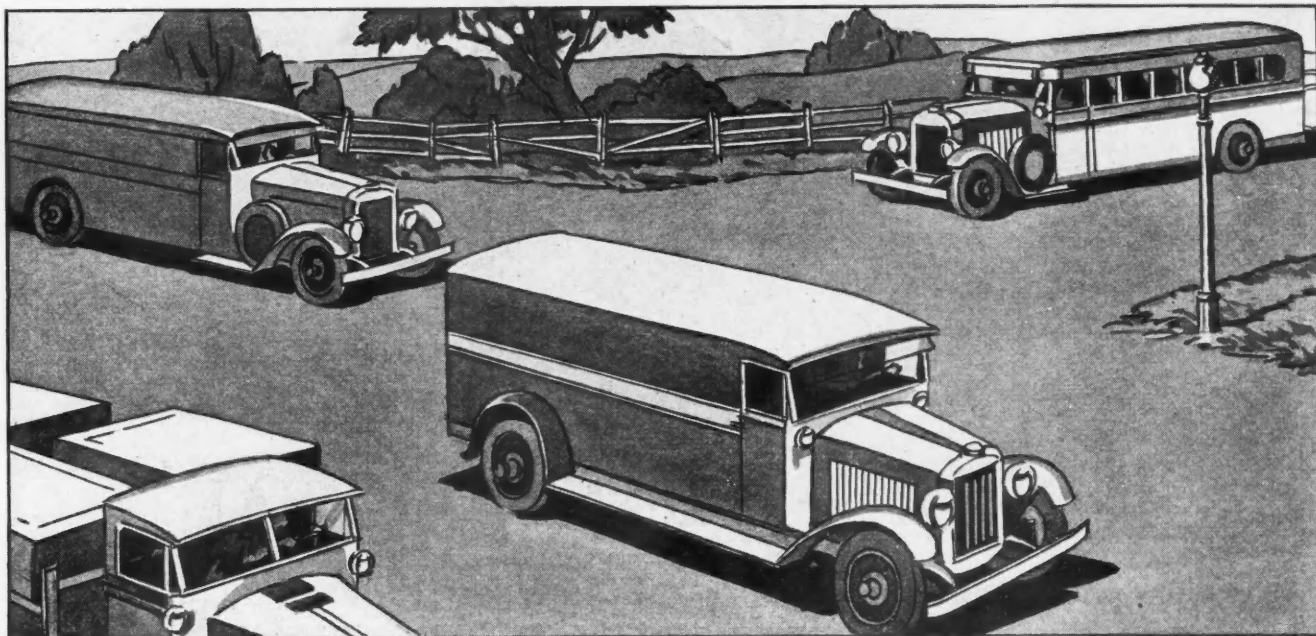
NEW YORK

CLEVELAND

CHICAGO

MILWAUKEE

HUNT-SPILLER AIR FURNACE GUN IRON BRAKE DRUMS



SAFETY ASSURED BY BETTER BRAKE DRUMS

Unquestionably, HUNT-SPILLER AIR FURNACE GUN IRON BRAKE DRUMS are among the most economical of all bus and truck equipment.

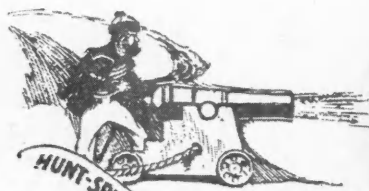
Their long life, their ability to withstand severe strain, their high coefficient of friction, their even, smooth-wearing surfaces, safeguard your original investment and lessen your operating costs.

To assert that HUNT-SPILLER AIR FURNACE

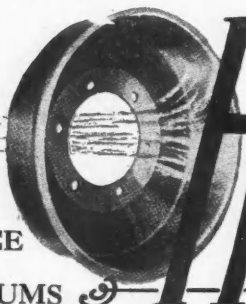


GUN IRON BRAKE DRUMS will cut down your operating costs . . . is merely an invitation to have you investigate them!

We want you to specify HSGI Drums on your next truck, for we are confident that their satisfactory operation, their direct saving of money will convince you of the extreme importance of having your entire fleet equipped with HUNT-SPILLER AIR FURNACE GUN IRON BRAKE DRUMS.



AIR FURNACE
GUN IRON
for BRAKE DRUMS



HUNT-SPILLER MFG. CORP

J. G. Platt, Pres. and Gen. Mgr.

V. W. Ellet, Vice-Pres.

Office and Works

383 Dorchester Avenue
South Boston, Mass.



Linked with Leaders

AMONG the names which stand out as automotive leaders of the day, Hyatt has an enviable record of consistent achievement, a royal lineage and a fine heritage of faithful service.

Appreciation of Hyatt design has ripened with the years. Proven performance over more than a quarter century of automotive progress has broadened the commanding position Hyatt enjoys.

Hyatt Quiet Roller Bearings in all these years have never failed to meet these exacting requirements: excellence of design . . . precision manufacture . . . long life . . . faultless performance . . . silent efficiency.

A plain fact . . . one which unquestionably points to universal preference . . . is that the advantages of Hyatt protection are always linked with the leaders.

HYATT ROLLER BEARING COMPANY

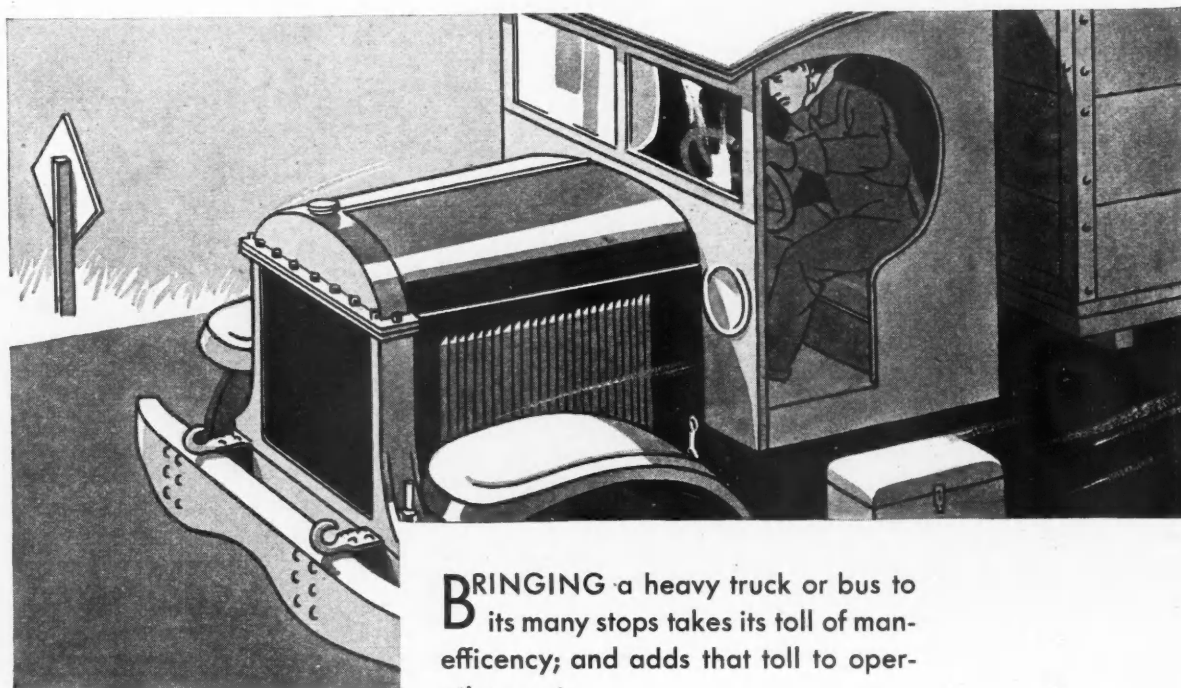
Newark Detroit Chicago Pittsburgh Oakland

HYATT

QUIET ROLLER BEARINGS

PROTECTING QUALITY PRODUCTS

GIVE YOUR DRIVER A BRAKE!...and a "break"



BRINGING a heavy truck or bus to its many stops takes its toll of man-efficiency; and adds that toll to operating costs.

Give your drivers a "break"—with Bendix Brakes. You'll cut your costs.

Bendix "Servo" action—an exclusive feature—uses the momentum of the vehicle for stopping energy; draws that force from the rotating wheels; multiplies normal leg-power into tremendous stopping power.

Bendix Brakes are tightly enclosed, for uniform efficiency in all weather. They are simple, rugged.

It's common-sense equipment—Bendix Brakes; particularly logical for heavy-duty commercial vehicles—a fact which more and more operators are learning from first-hand experience.

BENDIX BRAKE CORPORATION, South Bend, Indiana
(DIVISION OF BENDIX AVIATION CORPORATION)

BENDIX BRAKES

FOR SAFETY

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